The Influence of Oil Upon Settlement in AL-Hasa Oasis, Saudi Arabia.

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THE INFLUENCE OF OIL UPON SETTLEMENT IN AL-HASA OASIS, SAUDI ARABIA

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TO

My parents, my children and the people of Al-Hasa

ABSTRACT

The Middle East has produced the oldest cities in the world. They represent, in their traditional form, a specific adaptation to the harsh environment and the historical events that have occurred in the region. The long and bitter experience of man in this region has, indeed, taught him how to live well in these conditions. Now the old unity of the Middle Eastern City and its harmony with the environment of the region has been destroyed by the materialism of the modern oil industry in the region. The large sums of money generated in the economy of the oil-producing countries have allowed the inhabitants of these areas to reject their valuable heritage in favour of the immense possibilities of western technology.

This traditional heritage and its recent rejection can be seen in detail in Al-Hasa Oasis, whose towns and villages typify the Middle East and which has also been affected by the oil industry in the country. A study of this Oasis reflects both the tradition and the scale of change over the whole of the Middle, particularly Saudi Arabia.

Permanent settlement in Al-Hasa Oasis has mostly been determined through the centuries by the existence of a large number of natural springs and the availability of suitable land for cultivation. However, the origin and evolution, the location and distribution, form and structure of settlements, as well as the selection of construction materials, have always been influenced by both the human and the physical factors represented in the Oasis. The relevant factors include geology, geomorphology, climate, type of soil, water resources, and the division of the inhabitants into nomads and settlers, Shii'a and Sunna, rural and urban. Earlier insecurity, history and culture also cannot be ignored. All these factors had, in fact, acted together to produce the traditional settlement pattern of the Oasis.

Settlement in the Oasis was based mainly on date cultivation and, to some extent, on trade. Both gave the Oasis and its settlements in the pre-1930's a supremacy over most parts of eastern and central Arabia, not only economically, politically and socially, but also as a centre attracting population from outlying areas. It was the settlements of the Oasis which served at one time or another as capitals for eastern Saudi Arabia, and to which most of the wealth of the region used to flow. This accelerated their growth and enhanced their development causing them to outstrip all the other settlements of the region.

In 1938 oil was discovered in commercial quantities in the Eastern Province in areas distant from Al-Hasa Oasis, and this began to affect the

established pattern of life in the Oasis. Changes began to overtake the traditional economy of the Oasis and the long-established settlement pattern. The old values and concepts began to lose their validity and to give way before new and haphazardly adopted ones. While some of the changes are beneficial, others are not, and some are even detrimental.

This study deals mainly with the settlement of Al-Hasa Oasis and shows how it has been affected by the introduction of the oil industry in the region. The impact on the traditional economy is the main cause of changes in the Oasis and has been generally investigated, and the impact on the rural and urban settlements has been examined. Many interesting facts of some importance have come to light in the course of the investigation.

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INTRODUCTION

Since the remotest past, the Middle East has been the main source of all civilization.[1] As far as is known, the World's first cities emerged in this region, around the fourth millenium B.C., in the riverine areas of Mesopotamia (Iraq) and Egypt.[2] The early urban experience of man first evolved and developed in these cities which at that time served as centres for urban diffusion particularly to the surrounding areas, through either continuous commercial contact or frequent invasions. Throughout history, these early urban roots of the Middle Eastern City have evolved and developed according to the physical environment and human needs in these areas.

Although these cities emerged, flourished and eventually declined, according to the fluctuating fortunes of their builders, the urban elements within them continued to re-emerge in the succession of newly developed communities which rose and fell over the years. Different cultures might be adopted and adaptation made to new demands with the result that the Islamic town of the areas has inherited a long tradition of urban experience, accumulated in the Middle Eastern City long before the rise of Islam.

While Islam has in various ways digested the inherited urban elements of the old Middle Eastern City, it has also produced, its own urban ideas, arising from its faith and culture. The two elements have merged together to produce what is commonly called the "Islamic City". In fact the Islamic cities, particularly those of the desert regions of the Middle East, possessed over the centuries certain features which made them similar everywhere in their functions, structures and shapes. These common characteristics have been evident until recent times but the discovery of oil in the region in the first part of this century brought unexpected changes. The discovery and exploitation of oil came suddenly,

causing great changes but allowing little time for adjustment to the new situation.

In its early years the oil industry provided many employment opportunities with better incomes and higher living standards than those prevailing in the local communities. Wages were paid regularly and in cash and many advantages such as free loans for housing provided by the oil companies for their employees. Consequently, not only did the established economic pattern of many areas change but at the same time the newly emerging oil areas of the region became centres of gravity for all migration, particularly from the nearby communities, when the old traditional power now became much diminished.

Generally speaking, oil exploitation in the Middle East altered, directly or indirectly, the whole pattern of life which had existed in this region for hundreds of years. Some developments were stimulated by the oil industry itself, while many others were the result of the vast amount of money from oil revenues which for the first time, enabled many governments in the region to embark on social programmes including the improvement of living standards, housing, health, education, transportation, etc. As a result many previously obscure areas of the Middle East started to develop at such a rapid pace that adjustment to a new way of life became difficult and man and his habitation in the area began to experience changes for which they were unprepared.

This study examines the impact of oil on Al-Hasa Oasis, Saudi Arabia, which has been recently affected by the discovery and exploitation of oil some distance away from the Oasis. It is hoped that this area will be typical of a Middle Eastern region which has felt the impact of these new developments.

Al-Hasa Oasis is located in the interior of the Eastern Province of Saudi Arabia, about 159 km. to the south-west of Dammam (Fig.1). It has

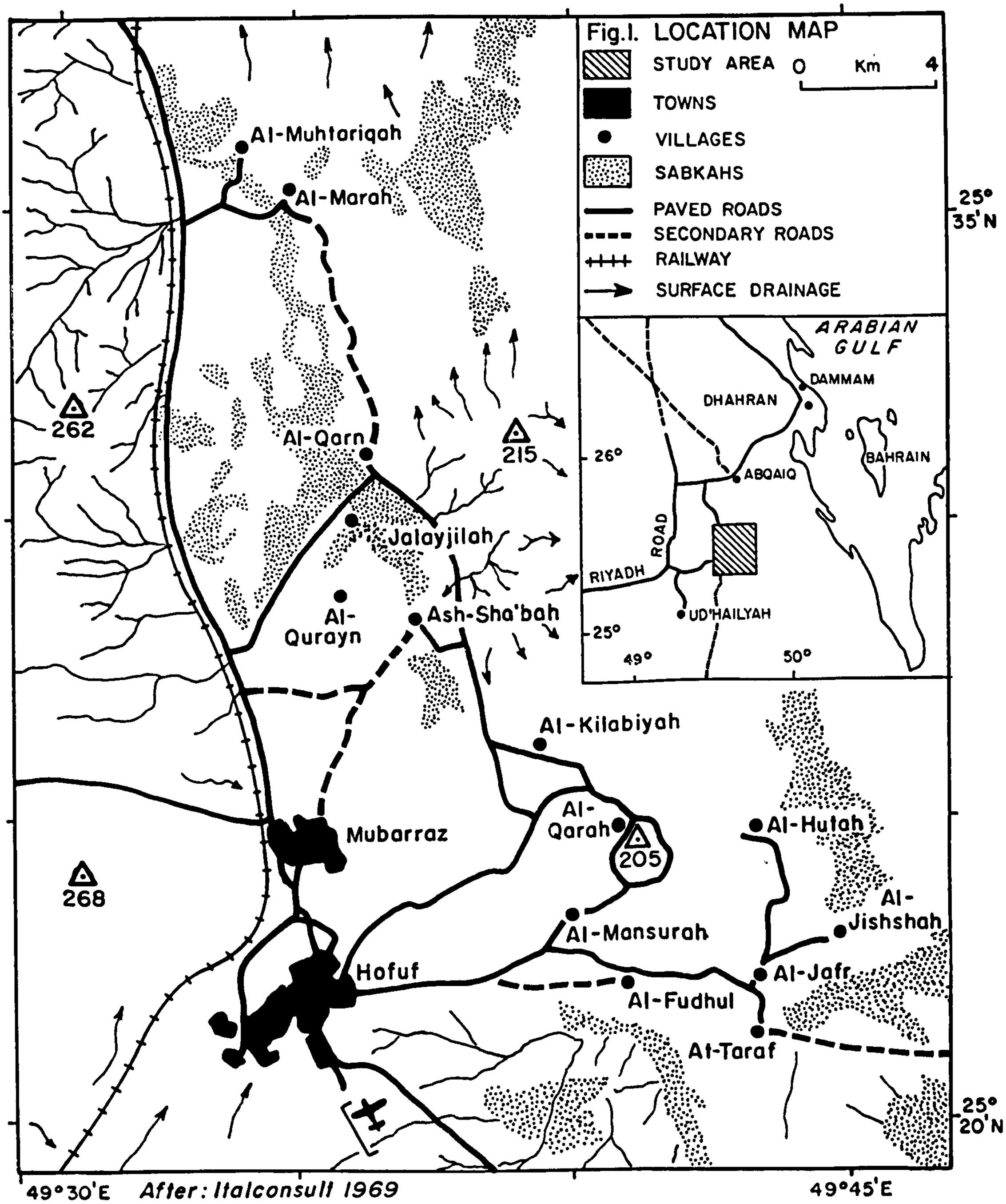
Fig.I. LOCATION MAP
STUDY AREA
0 Km 4
TOWNS
VILLAGES
SABKAHS
PAVED ROADS
SECONDARY ROADS
RAILWAY
SURFACE DRAINAGE
ARABIAN GULF
DAMMAM
DHAHRAN
BAHRAIN
ABQAIQ
RIYADH ROAD
UD'HAILYAH
26°
25°
49°
50°
Al-Muhtariqah
Al-Marah
Al-Qarn
Jalayjilah
Al-Qurayn
Ash-Sha'bah
Al-Kilabiyah
Al-Qarah
Mubarraz
Hofuf
Al-Mansurah
Al-Hufah
Al-Jishshah
Al-Jafr
Al-Fudhul
At-Taraf
262
215
205
268
25° 35'N
25° 20'N
49°30'E
49°45'E
After: Italconsult 1969

always been considered an important agricultural centre in the Eastern Province. With a current cultivated area of over 20,000 hectares, and a population of about 225,000, it forms probably the largest single oasis in the Arabian Peninsula. The dominant role played by the Oasis up to the time of the discovery of oil in other parts of the Eastern Province clearly indicated the economic ability of this small area to support a large population, even in the harsh environment of Arabia. It is striking that, while the main problem of the hot deserts in the world is the lack of water for both irrigation and domestic use, the problems of the Oasis have stemmed from the presence of an excessive quantity of water from the springs ($14.6m^3/sec$).[3] The existence of water and the availability of suitable land for cultivation are the major factors accounting for permanent settlement in the Oasis. However, Al-Hasa Oasis is considered to be probably one of the oldest agricultural areas in the Middle East, and it has been settled since Neolithic times or before.[4]

The discovery of oil in the Eastern Province was, indeed, a great event in the history of the region, but for Al-Hasa Oasis it has proved a serious matter, for the oil was discovered in areas distant from the Oasis. In one way or another it shifted the centre of power, long established at the Oasis, to new areas and settlements previously unknown. As a result, the long-established pattern of life in the Oasis was shaken. Consequently, the whole settlement pattern of the area has changed to suit the new circumstances brought about by the oil industry.

The purpose of this study is to describe and explain the urban and rural settlement of the Oasis in the past and in the present, so that the impact of oil upon the settlement pattern of the Oasis can be examined.

To achieve this aim, the study, first of all, traces the roots of the general urban life of the Middle Eastern City which will be used as

an urban background and a model for the study of the Oasis past. The ancient settlements of the Oasis and the factors that have affected their growth or decline, from early times, have also been examined according to the model of the Middle Eastern City. The origin and evolution of the contemporary settlements of the Oasis are also traced together with the factors that have influenced their traditional development, structure and morphology, until the discovery of oil in the Eastern Province of Saudi Arabia in the 1930's. With the information available, both types of settlement can be assessed and variations between the two examined. An attempt is also made to isolate the various factors which influenced the traditional settlement pattern.

Secondly, it deals briefly with the general impact of oil on the development of the Middle Eastern City and examines in detail the impact of oil exploitation, in areas distant from the Oasis, upon: (a) the traditional economy and migration. (b) The physical growth and decline of settlements. (c) The changes brought about in the old structure and pattern of the settlements of the Oasis.

This study also sets out to examine all the physical and human factors which have affected the general settlement pattern in the Oasis both in the past and in the present. It is very important to emphasize that the examination of the Middle Eastern City and the physical environment of Al-Hasa Oasis is critical to this study, for the Oasis represents a part of the Middle Eastern region and the study of the towns and villages of the Oasis would be incomplete if they were studied in isolation from the general trends of the Middle Eastern City and Village. The Oasis is also the product of its physical environment. The good soil, abundant water and the relative flatness of the Oasis land have been essential for the cultivation of such a large area and the ability to support a large concentration of population. Without the availability

of such an environment, the existence of many settlements in the Oasis would have been impossible. Moreover, settlement sites, their distribution and their physical structure have also been largely affected by their physical environment. For example, the continuous drifting of sand-dunes blown into the Oasis by the north and north-westerly winds caused the movement of many settlement sites away from the encroaching desert, where in the past, many settlements and good agricultural lands had been buried beneath the sand. Today despite modern technology, which has brought about some improvements the danger of sand is still present.

The existence of a depression in the land-form of the Oasis, at its north-eastern corner, resulted in the accumulation there of surplus water. This has not only affected the salinity of the soil, through evaporation, but also the land use and the distribution of population. It has discouraged the erection of settlements in that part of the Oasis, for the accumulated water forms a health risk as well as an obstacle to communication in the wet seasons.

The physical location of the Oasis, on the main trade route between the Arabian Gulf and central Arabia, made it also an important trading centre and that positively affected the growth and development of its settlements which directly or indirectly engaged in trading. Indeed, in these respects, Al-Hasa Oasis is a unique area in the whole of Saudi Arabia.

Finally, a general but brief survey on the typical Middle Eastern and North African City is also included in this study, particularly the cities of Saudi Arabia. It deals, as far as possible, with the origin and development of the City in the region and the factors that have affected its historical development or helped to form its traditional physical morphology.

The modern development in the Middle Eastern City, as a result of

oil exploitation in the region, has also been dealt with as far as possible, and the changes that occurred in its physical structure have been generally examined. It is hoped that this general survey on the City in the Middle East and North Africa will serve as an urban background to the study area which is a part of this region. It is also hoped that modern developments in the physical structure of the Middle Eastern City will serve as an indicator of what has occurred in similar areas as a result of oil exploitation.

It is generally accepted that data on under-developed countries are scanty and unreliable. All Middle Eastern researchers are no doubt familiar with this problem. Saudi Arabia and, in particular, Al-Hasa Oasis are no exceptions to this general pattern, for the country has not yet had a national census published, even in 1975. It may be easier to grapple with the physical geography of the country, but, when it comes to dealing with the human geography, which involves society and all its complications, the matter proves most difficult. A realisation of this has led to an attempt from the very start to assemble as much information as possible on the Oasis.

During the first year in the University of Durham (October 1970 to October 1971) the libraries of the University were explored, and the relevant material concerning the study area was collected. Material from other sources such as the British Museum, London, Oxford, Leeds, Bangor Universities and others was also collected. Much of the material available was found to be adequate only for a superficial treatment of the subject, dealing as it did either with the Middle East or with Saudi Arabia as a whole. There was very little material concerning Al-Hasa Oasis.

With the obvious limitations imposed by the lack of information, the field study became of the utmost importance. But field work also presents numerous obstacles, particularly through official procedures

and the social attitude of the people. Thus a field work plan to overcome such difficulties had to be considered carefully and in advance. Field work was carried out between July 1972 - February 1973 and in September 1975. It involved the collection of data, reports and material from differing government agencies in Riyadh, the capital of Saudi Arabia. During the trip, the author also visited Dhahran, Damma, Al-Hasa Oasis and various other towns, where he was kindly introduced to the differing government agencies by official letters provided by King Abdul Aziz University at Jeddah. These visits have provided a unique opportunity to collect a variety of data, reports and material concerning Al-Hasa Oasis from several government agencies in Riyadh. Permission was also granted to see some of the restricted reports of Wakuti Consulting Engineering, Italconsult, Stanford Research Institute and other bodies where the relevant accessible material was collected. Aerial photographs from 1949 and 1969 have been provided, mainly by the Ministry of Petroleum and Mineral Resources (Saudi Arabia). Official maps and town plans were also provided by various government departments, as stated in the text.

Obtaining information on Aramco (Arabian American Oil Company) employees of Al-Hasa Oasis, which is very important, proved most difficult, not only because all employees from the different parts of the country were listed under certain numbers, for computer use, but also because the Company wanted to keep certain information for its own use. Eventually, private permission was granted to see the record of employees, from which data on employees living in Al-Hasa Oasis was gathered.

From October 1972 until January 1973 a study trip was made to Al-Hasa Oasis. Both towns of Hofuf and Mubarraz,which are only 4 km. apart, were visited as well as the majority of the other villages in the area another study trip was also made in September 1975. As a Saudi national,

it was realized from the start that questionnaire surveys in the Oasis were unknown and impossible to carry out due to the suspicion that such surveys create, - hence, obtaining information on certain delicate issues was achieved through interviews and prolonged friendly discussions. More than thirty extensive interviews were held in each of the towns of Hofuf and Mubarraz. Various topics were raised in these interviews. These include the following:-

(1) The development of oil in the Eastern Province of Saudi Arabia and its general impact on the economy of the country as a whole.

(2) The positive and negative impact of oil on the traditional economy of Al-Hasa Oasis, such as trade, crafts, industries, agriculture, livestock and the general living conditions in the area.

(3) The impact of oil on the population movement in the Oasis and between the Oasis and the oil areas located further north.

(4) The role of the oil company in creating completely new western style suburbs in the towns and villages of the Oasis and the spatial location of such suburbs.

(5) The inspiration drawn from this western influence and the decline of traditional styles.

(6) The extension of the towns and villages outside their old confines and the reasons for such expansion.

(7) Differences between the old and new structures in the towns and villages of the Oasis.

(8) The government housing policy and the physical structure of the old towns.

(9) Values and the problems of housing.

(10) Old and new building materials used in the construction of houses.

Furthermore, the headmen or Amirs of almost 20 villages, reflecting

a cross section in terms of size and function, were also interviewed on the same basis as the above. Emphasis was placed on migration to the oil fields and its impact on the agricultural economy upon which these villages had depended for so long for their livelihood. For this purpose a small questionnaire survey was carried out in the main oil towns of Dammam, Al-Khobar and Abqaiq to investigate the size of migration from Al-Hasa Oasis to the oil areas, the reason for migration and the impact of such migration on the economy of the Oasis and various other points.

Interviews and discussions were also held with those responsible for settlement planning in the municipality of Al-Hasa Oasis, the Education Directorate, the Irrigation and Drainage Authority and the Agriculture Department as well as with the other local authorities in the area.

Settlements were studied by personal observation but much information was collected over friendly discussions. Various topics were covered such as the oil industry and its impacts, the local community, the relationship between Sunna and Shii'a (the two major division of Islam) and their views of the World were also discussed on such meetings.

However, the acquaintance* of the author with the area and a relatively long stay in its towns, mainly Hofuf, together with frequent visits to the different villages has greatly helped in checking the resulting findings and the available information on the Oasis in general.

Although the question of Sunna and Shii'a (the two major divisions of Islam) is a sensitive matter, an attempt was made to locate Shii'a and Sunna quarters in the two towns of Hofuf and Mubarraz. This purpose was achieved simply by travelling through the various parts of these towns with local people who knew the towns very well. A similar approach was also

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*The area has been visited on various occasions between 1966 and 1970 and again in September 1975. On the last trip, some new information relating to the periodic markets, the internal transport network and land prices in Hofuf and Mubarraz have also been collected

adopted for the villages.

Although this study has been built basically upon material collected during the field trip in Saudi Arabia, supplementary data from a large collection of literature dealing with the past conditions of the Oasis proved of great value in providing background information for the thesis. Such information was mostly derived from mediaeval Arab writers and European travellers of the nineteenth and early twentieth centuries AD.

It must be mentioned here that statistical data on the towns of Saudi Arabia are still inadequate for a detailed study such as this one. Sometimes data on some towns are completely lacking and if they were found it would be for only a short period and rather unreliable. Obtaining such information in the field would be restricted to the limited time available for the study and the efforts of individuals. Consequently, applying statistical methods would be impossible under such circumstances although it is recognised that accurate points could have been made by using such statistical methods as correlation analysis or factor analysis.

From the above considerations the reader should be aware that statistical methods have not been used in this thesis.

There are still parts of the study where very little information was available and others where care must be taken as to its reliability. However, the maximum effort has been made to ensure that it is in fact reliable.

The thesis is divided into five parts. Each part is subdivided into a number of chapters. The first part is a general survey of the City in the Middle East.* It deals, with the origin and diffusion of the city, the classical city, Islam and the development of cities, and the physical and human factors that have produced the traditional structure and morphology of the city in the region. Also, recent major changes in the Middle Eastern City, particularly in the oil producing areas,

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* Sometimes the North African city has also been mentioned but only on certain and relevant occasions

are examined in an attempt to indicate what has been happening outside Al-Hasa Oasis. Throughout, special emphasis has been given to the development of the city, past and present, in what came to be known, since 1932, as Saudi Arabia.

The second part examines the physical elements of Al-Hasa Oasis, which have actually affected the site, structure and distribution of settlements. Geology and Geomorphology, climate, soil and the water resources of the area have all been investigated in detail. Reference to this part will be made later in the text when necessary.

The third part traces the origin and evolution of the major urban settlements of the Oasis from earliest times until the introduction of the oil industry into the Eastern Province of Saudi Arabia. Emphasis has been placed, as far as possible, on the various historical events and factors that have led to their growth or decay during different periods, especially when they were governmental, administrative, religious or trading centres. The old urban structure and the morphology of the contemporary towns have also been presented in this part. In the case of the rural settlements of the Oasis, the origin and evolution of the existing ones have been studied and the physical and human elements which have affected their spatial location, size, structure and morphology distribution, have been surveyed and discussed.

The fourth part is a detailed examination of the impact of oil upon the general economic life of Al-Hasa Oasis as it has affected settlement through emigration to the oilfield areas.

The fifth part presents the actual changes that have occurred in the urban and rural settlement of the Oasis as a result of the introduction of the oil industry in the eastern part of Saudi Arabia.

Al-Hasa Oasis is a typical Middle Eastern Oasis, its towns and villages being representative of others in the region, particularly in

Saudi Arabia. Therefore, before dealing with the towns of the Al-Hasa area, this study starts with a general survey of the Middle Eastern City, especially in Saudi Arabia, both in the past and in the present so that the rise, development and decline of cities in the region can be examined briefly and recent important changes in their functions, structures and morphology assessed.

It is important to emphasize that, this initial study is essential to this thesis, in order to show the features which the towns of the study area and the typical Middle Eastern City (particularly those of Saudi Arabia in which the Oasis is located) have in common. It is also necessary to point out, the effects of oil development in the Middle Eastern City before proceeding to examine similar changes in the towns of the Al-Hasa area.

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PART ONE

THE GENERAL URBAN BACKGROUND OF THE MIDDLE EASTERN CITY

CHAPTER 1

THE PRE-ISLAMIC CITY

1.1 The Origin and Diffusion of the City*

Although the City, according to Reissman, is at least five thousand years old,[1] the dating of the earliest cities is still a point at issue.[2] No-one is certain where or when the first cities arose. Although Eridu of southern Mesopotamia (Iraq) is often regarded as the oldest city on earth, Catal Huyuk, discovered in 1961 in Anatolia, may have a stronger claim to this position.[3] It is still unknown why man first left the land to live in a denser urban centre. Nor is anyone certain why human beings invented the city. The historians see it as an advance in the social evolution of man. Man progressed beyond the pure pastoral and agricultural existence and became able, for the first time, to control his environment by building cities.[4] It seems, however, that human beings slowly and gradually evolved more complex forms of organisation before they were able to invent the city. Braidwood stated that before what he called "The Agricultural Revolution" small groups of men lived mostly in caves, hunting, fishing and gathering a few edible wild plants. But after the domestication of plants and animals in the Near East, larger groups of men started to live in villages, where they cultivated the land and tended the animals. This gave them enough food and thus permitted the specialisation of labour and the kind of class structure that can provide the leadership and manpower to develop and maintain extensive irrigation systems, which in turn increased the food supply. Braidwood found considerable evidence, firstly in the cave of Zarzi, and secondly in the village of Hassuna in Iraq, to support the hypothesis that the pre-agricultural people lived in the beginning in caves and then moved to live

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*The term "city" is used generally to denote any urban form and carries none of the ancillary connotations of size, state, status or origin implicit in the contemporary American or English usage.

in villages. The people of Hassuna first camped around a hearth in the open and then built mud houses where they lived a full peasant existence.[5] Some of the small agricultural villages of the riverine plain of Mesopotamia (Iraq) not only increased greatly in size but also changed decisively in structure as their technical experience increased.

Sjoberg recognised three major factors for the emergence of cities. Firstly, an advanced technology (advanced relative to the pre-urban form, both in the agricultural and the non-agricultural sectors, the level of technology being the degree to which man's tools and inventions can make use of the resources of a given area).[6] Urban settlement according to Gist and Fava requires a high technological competence to produce enough food and other necessities for dense populations living permanently in a fixed place.[7]

Among the technological advances that set the stage for early urban living was the domestication of grains such as wheat, barley, and others in the Middle East. The importance of grains is not to be minimised, for with other plants and animals they provide food all the year round for the urban population.

Other technological developments associated with the earliest cities in the Near and Middle East are large-scale irrigation works, animal husbandry and metallurgy, the wheel and in some cases the plough.[8] Sjoberg commented that metallurgy meant better tools for agriculture and industry, and using animals in cultivation and transport meant greater efficiency in agriculture and in the transport of produce to the city. Transport improvement facilitated easy access to material essential to manufacturing in the city. It also helped to expand trade between cities. As a result, contact between people was established, which in turn stimulated innovation as well as permitted some degree of specialisation among regions in the kind of goods produced.

The development of technology thus in large measure made possible

the concentration of people in permanent settlements. The creation of large permanent urban communities reciprocally stimulated a relatively advanced state of technology.[9] This was largely achieved by the invention of writing, the use of wind for sailing the seas and grinding grain, and the use of water power.[10]

Secondly, technological advance alone is not enough for the emergence of cities. A special organisation, particularly in the political and economic spheres, was also needed to store and distribute the agricultural surplus production and the manufactured goods within and among the different communities. The construction of public buildings, city walls and an irrigation system needs a labour force which could only be organised by such an organisation. To achieve these functions, this kind of organisation needs varieties of specialists and professionals directed by sufficient political power, and aided by an ideology usually religious in character so that peasants contribute periodically part of their yield to support the city dwellers.[11]

Thirdly, a favourable environment, including a climate, soil and natural resources able to sustain a sufficient development of plant and animal life was also required to support a rural and urban population.[12]

Adams sees the emergence of cities as a result of the development of irrigation techniques in the riverine plans of Mesopotamia. His argument is based on the fact that irrigation techniques required a centralised control, and this in itself necessitated inequalities in access to the irrigation land. In this way, irrigation contributed to the formation of a stratified society. Security, defence, and the warfare of the people would draw them together in a certain concentration.[13]

These are apparently the preconditions for the emergence of cities, but these ideas have been completely rejected recently by Jane Jacob. She proposed that agriculture and animal husbandry arose in cities, thus

suggesting that the city was invented before the village, and urbanism preceded agriculture.[14] Her conclusion is, in fact, based on the discovery at Gatal Hüyük in Anatolia of some traces of urban life as early as 7000 BC.[15]

Childe connected civilisation etymologically to the word city,[16] which implies that civilised life started only with the invention of the city and not before. However, Adams believes that changes in social structure precede the creation of cities, which are one of the results of these social changes. He believes that many of the qualities attributed to civilised societies have been attained by societies that failed to organise cities. He stated that, "Some Egyptologists believe that civilisation advanced for almost 2,000 years under the Pharaohs before cities appeared in Egypt."[17] Archaeologists prefer to use 'writing' as a criterion of civilisation, but this does not mean that all the members of a civilised society can read and write, or that they all live in cities. "Civilisation, wherever and whenever it arose, succeeded barbarism."[18] Thus it would be possible for civilisation to exist without cities. It appears that the city did not start from scratch, it could and probably did draw upon experience accumulated in the early settlement of man in the caves and in the villages where the earliest cities arose.

The concept of the city, according to Childe, is "notoriously hard to define."[19] Mumford dealt with its complexity by a comprehensive definition: "The city in its complete sense...is a geographic plexus, an economic organisation, an industrial process, a theatre of social action, and an aesthetic symbol of collective unity."[20] The complexity is only to be expected because of the many activities a city contains, but the study of the city is hard, for it involves also the study of contemporary society.

It can safely be said, according to Morris, that the world's first

cities were the Sumerian cities which arose in the riverine plain of Mesopotamia (Iraq) around the fourth millenium B.C. Not only were the soil and water resources suitable, but the region was also a 'crossroad', and this facilitated repeated contacts between people of different cultures over thousands of years.[21] The accumulated experience resulting from the continuous contacts between the indigenous and foreign cultures must have contributed to the evolution of the first true cities out of the villages of lower Mesopotamia. The origins of such cities as Eridu, Erech, Lagash and Ur in southern Mesopotamia are more familiar to the archaeologists than to others.[22]

However, the idea of the city probably spread from Mesopotamia to the other regions through the commercial contacts which have long been recognised as existing between Mesopotamia, Egypt and the Indus valley (Pakistan); this contact was probably an important factor in the building of towns in the three regions. Excavation in 1970 in southern Iran at Tepe Yahya suggested the existence of another urban civilisation linked with Mesopotamia and the Indus valley by trade.[23] Sjoberg commented that, "The probability that the first cities of Egypt were later than those of Sumer (Mesopotamia) and the certainty that those of the Indus and Yellow Rivers (China) are later, lends weight to the argument that the concept of urban living diffused to these areas from Mesopotamia,"[24] (Fig.1.1).

It seems that these three regions served as centres in which the idea of the city developed and from which it spread to the neighbouring areas. But the urban evolution of these cities cannot be correctly interpreted except in relation to the evolution of technology and social organisation. These two factors are not, in the words of Sjoberg, "just pre-requisite conditions" for the emergence of urban life, but they form the base for its development. He stated that:-

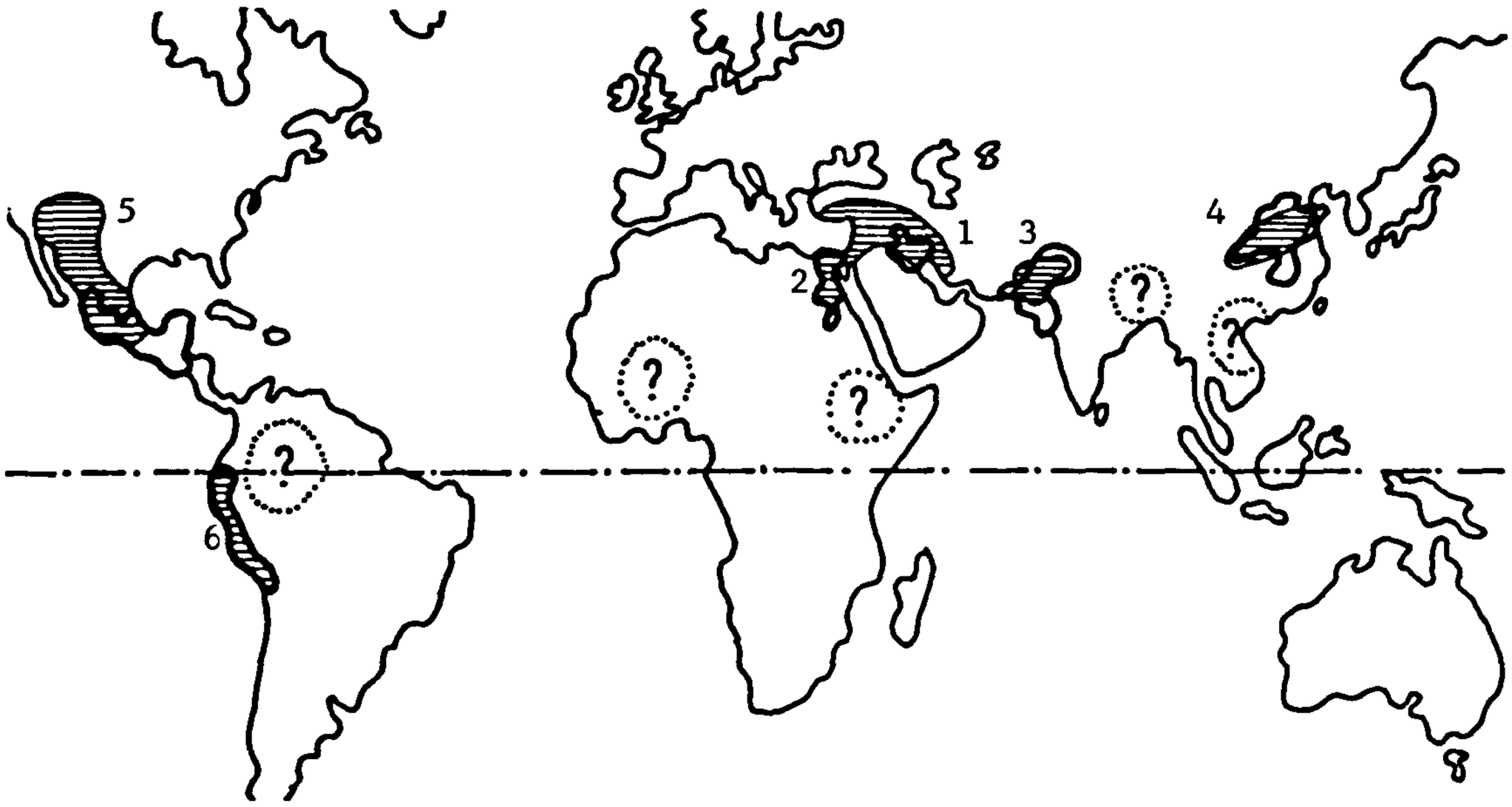
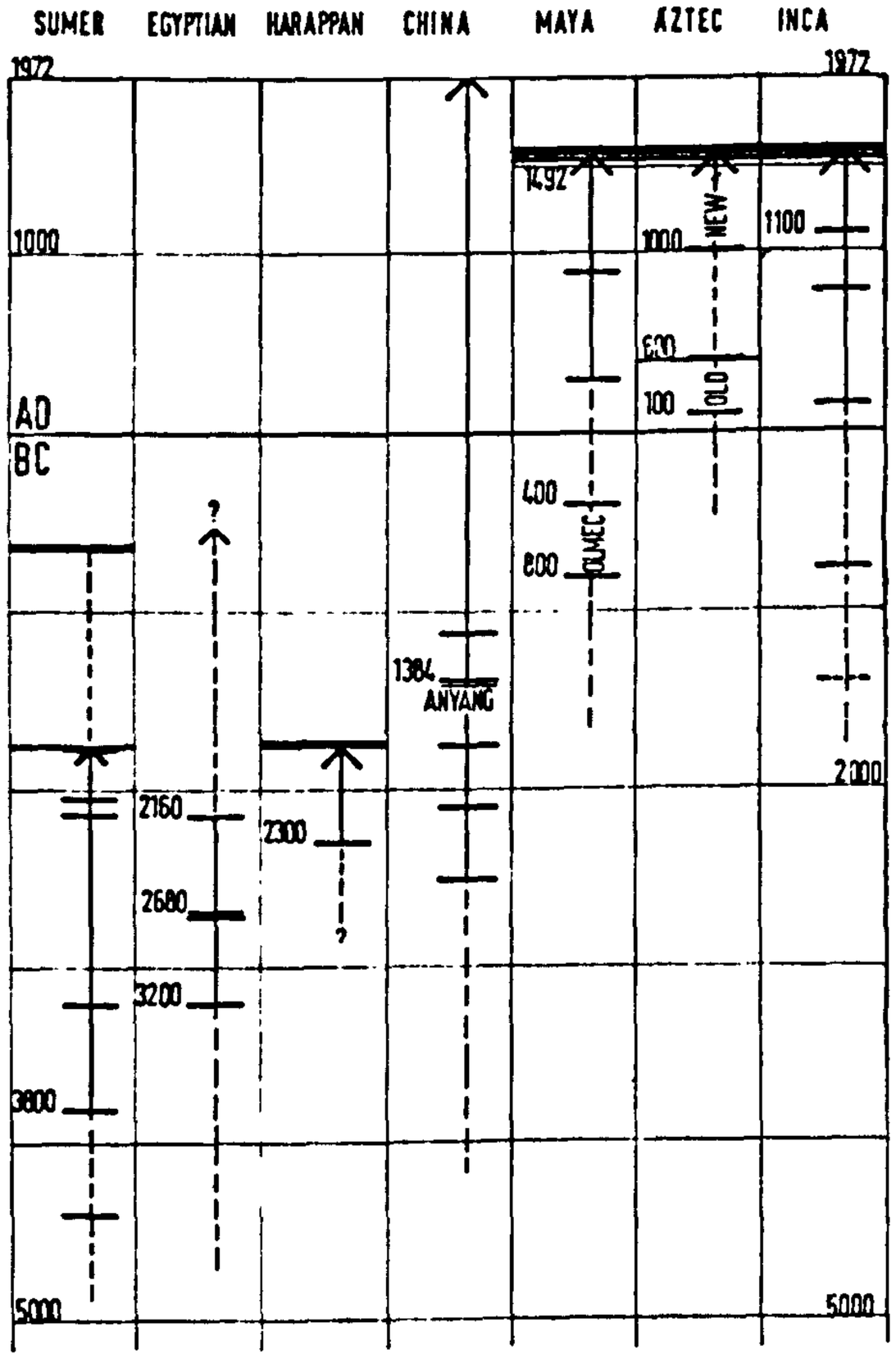


Fig.1.1 Locations and dates of first civilizations. After Morris (1972)

1. Sumerian
2. Egyptian
3. Harappan
4. Shang
5. Aztec and Maya
6. Inca



> as centres of innovation, cities provided a fertile setting for continued technological advances; these gains made possible the further expansion of cities. Advanced technology in turn depended on the increasingly complex division of labour, particularly in the political sphere.

For instance, the early urban communities of Mesopotamia were mere city-states drawing their resources from a limited area, but as trade and commerce extended over a much wider area, cities draw more human and material resources from far wider and diverse regions, even causing the birth of new cities.[25]

Sjoberg sees a close association between the diffusion of cities and political expansion. He connected the rise and fall of cities to the rise and fall of empires. Empires are effective diffusers of urban forms, because they have to build cities with which to maintain strong military presences in the annexed territories. At the same time, the diffusion of urban living is necessary for the maintenance of political structure. In order to exploit the fruits of conquest, the city requires an administration so that commerce can be encouraged. When a new city began as a purely commercial outpost, as was the case under the Phoenicians, then some military and administrative support was necessary if it was to survive and function effectively in alien territory. The ruins of the former capitals of many empires are today evidence of a glorious past. Some cities, however, managed to survive over long periods of time by attaching themselves first to one empire and then to another. Byzantium, a city-state of minor importance under Roman rule, not only became the capital of the Eastern Roman Empire, but also remained the capital of the Ottoman Empire, and, renamed Istanbul, it is still a major city to this day.[26]

There is ample evidence, however, to indicate that many of the early cities whose origin can be traced arose as a result of military invasions and not as a gradual development from primitive villages.

Ibn Khaldun, a fourteenth century Arab historian, stated that, in order to build a capital city, there must be a sovereign ruler or empire, and that the city will last only as long as the empire lasts.[27] Giovanni Batero (some centuries later) also, according to Sjoberg, connected the fortunesof cities with the strengths and weaknesses of the supporting political structure. Sjoberg himself agrees with both writers that the development of cities is related to the rise and fall of empires.[28] Lapidus believes that the Arab conquerors of the Middle East not only founded new garrison cities, but also took over parts of the established cities or created new suburbs. Later regimes adopted the same policy. Cairo, Baghdad and numerous places in North Africa, such as Raggada (near Kairawan), Kairawan, Fatimid, Mansouryyia, Muhammadiyya, were creations of this sort.[29]

In the light of the frequent rise and decline of cities in many areas in the world, one may ask how urban life has been able to persist, and why the skills of technology and social organisation required for city-building were not lost. The answer, is that the knowledge was maintained within the framework of the empires by means of written records and of oral transmission by various specialists. Moreover, all empires have added to their store of skills relating to urban development as a result of diffusion - including the migration of specialists from other civilised areas. At the same time, various civilised or uncivilised subjects within empires have either been purposely educated by their conquerors or have otherwise gained access to urban lore. The result on occasion is that the subjects challenge the power of the dominant ruling group.

The Romans, for example, took many elements of their civilisation from the Etruscans, the Greeks and other civilised people who came under their rule. In order to exploit the conquered area, the Romans had to

train the local subjects to occupy posts which the Romans themselves were unable to staff. Having been urbanised and having acquired many Roman technological and administrative skills, the people of these areas turned against the Roman Empire and engineered its final collapse. The modern independence movements of Africa and some other parts of the world are more recent examples of this phenomenon.

Thus, despite the Romans' decline, many of the techniques and concepts associated with literate traditions were kept alive within the smaller surviving urban communities of Europe and the Near East which had previously formed part of the Roman Empire. Some of the technology and learning associated with Rome also became the basis of city life in the Arab Empires that arose later in the Middle East, North Africa, Spain and even Central Asia. Indeed the Byzantine and Arab Empires, which had such major intellectual centres as Constantinople, Antioch, Damascus, Cairo and Baghdad, advanced beyond the knowledge inherited from antiquity.[30] The Arabs, for example, took over and expanded classical learning and philosophy, particularly in the fields of medicine and science, adding a considerable body of new thought, partly developed by themselves, and partly derived from Iranian and even Hindu sources.[31] Eventually much of the new learning was passed on to Europe, where it helped to build the foundations for the Industrial Revolution and much later the Scientific Revolution.[32]

1.2 The Classical City

At the end of the second millenium BC the Phoenicians, who probably migrated from Arabia,[33] established several cities, such as Jubail (the Greek Byblos), Sidon and Tyre, on the Syrian coast. As a seafaring nation, the Phoenicians spread westward and became active diffusers of urban life along the northern coast of Africa and in Spain, where many trading stations, such as the famous Carthage, were established.[34] Some

centuries later the Greeks followed a rather similar course, so that their city-states created or built numerous urban outposts along the Mediterranean shores from Asia Minor to Spain and France, and eastward to the most distant coast of the Black Sea.[35]

The interpenetration of Greek and Semitic civilisation gave rise to a new culture called Hellenistic, as distinct from the Hellenic or purely Greek. Hellenism became the dominant feature of the Near East in the three pre-Christian centuries. It remained an effective force in the area for a thousand years, until the rise of Islam.

In the beginning, Hellenism witnessed a great urban development. Alexander the Great and his successors founded around 85 towns or cities after 334 BC in an attempt to hellenise the Near East. Among them were Alexandria of Egypt, Antioch on the Orontes, Seleucus on the Tigris, Ladicea (al-Ladhiqiyyah or Latakia) on the Syrian coast, and Apamea (the Afamiyyah of classical Arabic, the present Qalat al-Madiq). In addition, older urban settlements in the Middle East were colonised and hellenised. Among them was Rabbath Ammon (renamed Philadelphia in honour of Ptolemy II Philadelphys), today known as Amman, the capital of Jordan, Beroia (Aleppo or Halab), Aram (Damascus) and the Phoenician cities.[36]

After the decline of the Greeks, the Romans established a similar empire, which inherited an extensive network of Hellenistic cities in the Middle East and North Africa. The Romans themselves also built many garrison towns for defence and to serve a variety of other functions in Syria, Mesopotamia, Asia Minor and North Africa. Persia was never a part of the Roman Empire, but several towns, such as Ahvaz, Kermanshah and Shiraz, were founded there by the Sassanid Dynasty (226 to 651 AD). However, the savage warfare between Byzantium and the Persian Sassanids disturbed the internal and external trade and commerce from which the area had derived great prosperity for centuries. The Roman Empire was

broken up, and many ports and inland towns were either deprived of their livelihood or raided and destroyed. Thus, while many cities such as Palmyra, Antioch and Petra fell into ruins, a large number of other cities, such as Leptus, Magna and Jarash, were also abandoned.[37]

1.3. The Pre-Islamic City of Arabia

Unfortunately, information about the ancient cities of Arabia is scanty and incomplete, and sometimes tangled with legends. This is perhaps firstly due to the fact that Arabia was mostly a forbidding and inhospitable region, isolated geographically from the great centres of civilisation in the north.[38] Secondly, the Arabs themselves have largely neglected earlier Arabian history because of their preoccupation with Islamic civilisation. Except for references in the writings of other ancient peoples and accounts by a few Arab authors, we had no knowledge of the ancient cities of Arabia until the nineteenth century, when Western explorers visited the southern part of the country. They found ruins of fine buildings, sculptures, canals, roads and well-planned cities which revealed an advanced stage of culture.[39] This indicates that Arabia in ancient times was not merely an adjunct to the civilised countries farther north, but had its own centres of civilisation, though they may have been developed later than those in Mesopotamia or Egypt.

The history of civilisation in Arabia according to Mahmud goes back to the third millenium BC.[40] But we know absolutely nothing about its origin or its development because no serious excavation has taken place in the area. From the imposing ruins of several cities and from thousands of inscriptions written in the south Arabian languages it has become evident that during the first millenium BC various city-states developed in the relatively well-watered region of south-western Arabia (Yemen).[41] Four may be mentioned as the most important. They are, moving from north to south-west, Ma'in (1400-850 BC), Saba (850-115 BC),

Qataban (865-540 BC), and Hadhramout (1020-65 BC), whose capitals were Qarna, Ma'rib, Tamna and Shabwa respectively. In fact, some of these states had two capitals, such as Ma'in and Saba.[42] Of these city-states, Saba was the most famous. It showed, according to Landau, a high degree of political organisation. The lengendary Queen of Saba' (Sheba), who visited King Solomon in the tenth century BC, may have come from here.[43]

It was the Sabaeans who developed a high-level material culture within the Peninsula and it was they who, by their enterprise, gave it an important, though peculiar place in the history of the ancient Near East.[44] As a civilised nation, the southern Arabian people built dams, such as the famous dam Ma'rib, to impound and conserve the floods of the rainy periods, and their system of irrigation seems to have provided their basic means of support. They also controlled the main trade routes in Arabia, which proved to be of great importance to the rest of Arabia.[45]

South Arabia was the producer of luxury articles such as frankincense and myrrh that "made Ma'rib city the Paris of the southern part of the ancient world, creating that romantic image of Arabia in the minds of classical authors, who called it Arabia felix (or Happy Arabia)."[46] However, it not only produced luxuries, but also imported other luxury articles from two major areas of production in Asia and Africa, for example - India and Somalia. This led to the development of Qana city (rather than Aden) as a great naval station on the Indian Ocean, so that it would be possible to handle foreign trade with these two continents from a southern outlet.[47] In the north they opened up the vast expanses of the Arabian desert to trade-routes, organised the caravans and ensured their safe conduct by a series of caravan stations until they reached their terminal in the Fertile Crescent.[48] The desert of Arabia, located to the north, ceased to be merely an arid expanse, and became a transit area, through which passed the commercial articles of world trade.

Thus, of all the contributions of the south to the rest of Arabia, it was the impetus it gave to the urbanisation of western Arabia that proved to be the most decisive. The Oasis, which had been just a cluster of date palms in the middle of a vast desert, became a commercial centre on the caravan route, a new type of urban settlement, the caravan city. This in its turn gave rise to a new type of community among the Arabs, the community of traders.[49]

During the first millenium BC, chains of settled establishments appeared along the caravan routes across Arabia. Cities such as Gerra, Qatif, Hira, Tadmour (Palmyra), Petra, Dumah (Dumat al-Jandal, the modern al-Jawf), Al-Hijr (Madain Salih), Tayma, Dedan (Al-Ula), Yathrib (Medina), Mecca, Taif and Najran were stations located on the caravan routes.[50] It is not known whether these towns had existed before the caravan routes or came into being as a result of them. One can only say that these towns seem to have flourished as stations along the caravan routes across Arabia.

For Tayma, Winnett claims "a very remote period" or origin, reference to the town having been found in an inscription of the Assyrian King, Tiglathpilser III (747-27 BC), who claims to have received tribute from it. However, it was not until the sixth century BC that Tayma attained importance. In 552 BC King Nabonidus of Babylonia withdraw entirely from his country and retired to the town of Tayma where he resided for ten years. He built there, according to the records "his palace like the palace in Babylon...(and) made the town beautiful." From an inscription found at Harran (in Turkey), it is evident that he also visited Dadanu (Dedan, modern Al-Ula), Padakku (Fadak), Hibra (Khaybar), Ladihu (Yadi?), and Iatribu (Yathrib, modern Medina).[51] This indicates that these towns were already in existence in the sixth century BC. In fact, the large number of inscriptions found in the ruins of Dedan (Al-Ula)

testifies to the important role played by the town in the commercial and cultural life of ancient Arabia. How far the inscriptions carry us is as yet uncertain.[52] The importance of Adummatu (Dumah or Dumat al-Jandal, modern Al-Jawf) is evident from Assyrian records. In the seventh century BC, the town was clearly the principal Arab settlement in upper North Arabia, for it was against this town that Sennacherib struck when he attempted to bring the Arabs into submission. In fact, the town was the seat of a series of north Arabian queens, such as Tel'elhunn, Tabua/ Tarbua, and probably queens Zabibe, Samsi and Iati'e also resided there.[53]

According to Jeffery, the first traces of a truly Arab settled civilisation in the north-western part of Arabia appear with the Nabataeans, whose centres of Petra, Tayma and Al-Hijr (Madain Salih) became famous enough to gain mention in non-Arabianhistory. They too were interested in the carrying trade, but they also had agriculture based on cistern and conduit irrigation. "They built well-planned settlements and forts to protect their trade routes, carved great temples out of solid rock, developed a characteristic style of architecture and a pottery which for delicacy and beauty of form and decoration had no rival in the Near East". From the third century BC to the second century AD they enjoyed a civilised life on a level with that of the eastern Mediterranean cities.[54]

It seems that "the rise, decline and fall of these ancient Arabian towns follow the laws that govern the life of settlements on the frontier which derive from the political and economic life of the ancient Near East. Politically, the stronger the Fertile Crescent and southern Arabia are, the more difficult it is for the Bedouin to effect deep penetration and establish themselves in these areas as sedentary inhabitants. During most of the first millenium BC the Arabs had to face a Fertile Crescent united by the military might of the Assyrians, a unity which was maintained by the neo-Babylonians and the Persians. But in the second century BC

this unity was broken and the Crescent remained divided between hostile groups, the Parthians and the Seleucids, the Parthians and the Romans, and finally the Sassanids and the Byzantines. Economically, these Arab towns probably owed their prosperity to the fact that they are stations on the vital west Arabian and Mesopotamian trade routes. Hence the continued prosperity of this or that town is dependent upon the prosperity of the particular trade route on which it is a station. The rise and fall of Arab sedentary establishments is therefore determined to a great extent by changes which affect the fortunes of these routes."[55]

Trade reflected the political stability of the times, and it is possible that the fourth century BC was the golden age of these settlements, for then trade seems to have been at its peak. From the fourth century BC to the seventh century AD, trade declined due to the disputes between the Sassanid Dynasty centred on Persia and the Roman Empire, and due also to local disturbances within Arabia itself. Yemen was conquered by the Abyssinians (525-575 AD) and then by the Persians (575-622 AD). Consequently a general transition from city life to nomadic life occurred, most of the caravan cities being either abandoned or impoverished and the standard of life lowered.[56] Nomadic barbarism spread all over the Peninsula, except perhaps in a few city centres where traces of ancient civilisation survived. This phenomenon is exactly parallel to what happened in Europe during the Middle Ages, when the disruption of the Roman Empire caused a shift from urban to country life. International trade, which had brought into Arabia a higher level of civilisation, was almost paralysed. The Nabataean and South Arabian Kingdoms, the two main centres of sedentary life in Arabia, collapsed.[57]

Some of the towns which had an agricultural basis have survived till the present day. But those towns which secured an additional religious function, such as Jewish Yathrib and Christian Najran, emerged

as great centres diffusing Judaism and Christianity among the Arabs.[58] Mecca too, being located on the spice route half-way between Yathrib and Najran, became exposed to the two currents of economic and religious life which were running in western Arabia. Mecca then became not only a caravan station, but also a holy city. It was the home of pagan goddesses, especially al-Lat, al-Uzza, and Manat, the three most sacred to the Arabs. The Arabs would flock annually to Mecca during the sacred months, firstly to attend Ukaz (near Taif), the fair and scene of poetic contests, on their way to Mecca; secondly,to visit the holy city of Meeca with its Haram, the sacred precinct, and its Ka'ba, the Temple, and Arafat, the holy mountain of the pilgrimage. Mecca in the sixth century AD slowly emerged as the holy city of the Arabs, and its inhabitants, the Quraish, as the descendents of Abraham through Ismael (Ishmael). It was in Mecca that the prophet Muhammad was born (570 AD), and with his birth Arabia became the Cradle of Islam.[59]

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CHAPTER 2

THE ISLAMIC CITY

2.1 Islam and Civilisation

The advent of Islam and the following Arab conquests were for some time blamed as the major cause of the discontinuity of the old civilisation of the Near and Middle East. However, as early as the fourth century AD, both the Roman and Persian Empires had radically altered municipal institutions. Bureaucratic and centralised administration increasingly reduced local privilege and local autonomy. As a result, the civic institutions in the cities had suffered a gradual decline. In addition, the growing power of the church greatly influenced the cities, and the bases of local and social life were shifted from civic and secular to religious, theocratic institutions.[1] By the late Roman period, the municipal organisations had already begun to decay. The process of decadence was, however, gradual and complicated, and cannot be described in simple terms. In general, this process not only continued, but also intensified, so that with the introduction of the 'theme'* system, municipal organisations were completely destroyed. Thus, since civic institutions had long been in decay, there is no need to attribute their decline to external events. By the time of the Arab-Islamic conquests of the provinces of the Roman and Persian Empires, there was nothing left to inherit.[2] The Near and Middle East had already become of no importance in the urban life of classical times. Thus, the Arab-Islamic conquests did not destroy the ancient city, decay having already begun in late antiquity.[3]

On the contrary, with the advent of Islam, towns once again started

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*"The 'theme' was a military unit stationed in a provincial area [in the Byzantine Empire]...The organization of territory into themes began under Emperor Heraculius (reigned 610-641) who stationed troops in three large districts under the command of a military-governor. Soldiers were settled in the themes as farmers, helping to build a permanent citizen army". Later in the 7th century it was applied to the large military districts which served as a buffer zone against Muslim encroachment in Anatolia.

to flourish, and the Middle East emerged as a seat of civilisation, as it had once been in the remote past. Urbanism then experienced its golden age, especially between the seventh and tenth centuries AD. The generalisation that urbanisation in the world suffered its darkest age in the Middle Ages is, in the words of Hamdan, "only a half truth". Early in these centuries the Arabs did not merely stimulate the rehabilitation and regeneration of the old Roman towns, but they also extended urbanism by founding new towns and brought urban areas to a size they had probably never reached before.[4]

However, urban revival and prosperity under the Arabs lasted only for the first three centuries of Islamic domination, that is from the seventh to the ninth century AD. The tenth century marked the last time when Arabs led the world in urbanisation. The remaining part of the Middle Ages was one of decadence and de-urbanisation.[5] Ever since then the Arab East has lagged behind, while western Europe took the lead, especially after the Industrial Revolution, which accelerated the growth of urbanisation. The Industrial Revolution followed by the Scientific Revolution have, indeed, shaped the structure of the modern European and American town, while their impact on the Arab and Islamic town has been modest and very late.

Although the early followers of Islam were largely desert nomads, Islam was from the beginning a religion of town people.[6] It had first emerged in Mecca and Medina, which had already developed an urban civilisation. Even before the rise of Islam, Mecca and Medina were prosperous commercial centres on the caravan route between southern Arabia and the Mediterranean region, and had many of the characteristics of mediaeval cities.[7] It is true that the majority of the Arab Army which poured out of the Arabian desert were Bedouins (nomads), but the command lay overwhelmingly with the urban circles of Medina and Mecca.[8]

The process of urbanisation in early Islamic centuries was given great impetus not only by military and political considerations, but also by the religion of Islam itself.[9] One of the original social ideals of Islam was the 'sedentarisation' of the predominantly nomadic Arab tribes. 'Sedentarisation' was conceived, in early Islamic thought, as the main act of submission by the nomad Arabs to the new religion. Nomadism was disparaged and resented as a fault to be redressed by sedentarisation.[10] The exclusion of the nomads from full participation in the Friday services is, in fact, one of the many traits that characterise Islam as a religion of townspeople, at least in the sense that it tends to favour the settlers over the nomads.[11] Indeed, the Koran itself is basically urban, anti-nomadic, and its principles are applicable only to sedentary society.[12] The same could also be said of the doctrine of the prophet.[13] One of the major early religious institutions in Islam was the Jami or Friday mosque. The establishment of a Friday mosque, however, requires a fixed settlement with a permanent population of at least 40 responsible adult males to conduct the Friday prayers. In seventh century Arabia, this probably implied nothing short of urban conditions.[14] Ibn Khaldun, a fourteenth century Arab historian and social writer, points out that Islam had brought about a social transformation from the nomadic culture (Umran Badawi) which characterised pre-Islamic Arab society, to an urban culture (Umran Hadhari) in the post-Islamic period.[15]

2.2 The Development of Cities

While the Islamic Empire inherited many ancient cities in the previously Byzantine and Persian provinces, the Arabs themselves founded a great many new ones, particularly in North Africa where almost half the newly established towns were located. Many of these towns still exist today and some, which enjoyed geographical advantages, are among the leading cities in the region.[16] It seems that the early development of Islamic

towns was influenced by several factors, such as religion, and military, political, commercial and social factors.

Since the precepts of Islamic religion enjoin a close association between its followers, it became evident that its obligations could not be fulfilled except in a gathering in a fixed settlement. It is significant that the daily services (five prayers a day) should preferably be performed collectively in an urban gathering. Furthermore, the main Friday services cannot be held except in a settlement with a permanent population of at least 40 legally adult males. Thus these associations and agglomerations of the largely nomadic Arab tribes in fixed settlements originally resulted from the religious doctrines concerning prayers.[17] So the early Islamic city started with a mosque established in two distinct stages. The first stage consisted of the creation of a sort of forum usually called masjid (mosque) or Musalla (place for prayer), open from all directions, somewhere in the centre of the city. This space functioned not only as a place for prayers but also served all other functions which affected the community. The second stage occurred when these spaces were, finally, transformed from mere spaces into formal buildings.[18] In this way, Islam created many religious cities. The major ones include Najaf (791 AD), Karbela (680 AD), Mashhad, Mahdiyya, Fez, Marrakesh (1062 AD), Ujda and Rabat.[19] This is not, in fact, a unique phenomenon from the remote past. More recently, the revival of Islam by the Wahabi Movement in Arabia in the nineteenth and twentieth centuries led to the establishment of almost 60 new settlements to house the followers of the Movement from the nomadic tribes. Mention may be made of Artawyyah, Ghutghut, Al-Jfar and Dukhnah as examples.[20]

The military factor in the early Islamic period also played a decisive role in the building of new cities. In order to command the conquered territories and house the nomad warriors and their families, the auth-

orities built many garrison cities in these territories.[21] In fact, the Arabs were reluctant to settle in the ancient towns as a minority exposed to the hostilities of alien subjects.[22] Cities such as Kufa (638 AD), Basra (637 AD) in Iraq, Uabiya in Jordan, Fustat (old Cairo, 642 AD) in Egypt, Kairawan (670 AD) in Tunisia and many others were all built on the edges of the desert, the homeland of the Arabs, to serve military purposes.[23] In the beginning, these towns were often nothing but semi-permanent camps erected on the edges of the desert for the use of armies too remote from their base supplies in Arabia. They were unfortified, loosely organised, and built near pre-Islamic settlements for the easy supply of the provisions needed before these camps grew into towns. From this sort of urban creation grew the ribats (fortified barracks) designed either to protect the Islamic frontiers or as a pious retreat in the interior. These became the seeds of very important cities such as Sousse (Sus), Sfax, Monastir, Salé and Taza. In fact, Rabat, the capital of Morocco, preserves in its name the memory of its origin as a ribat.[24]

Political influence in the establishment of new towns has been of great importance in the Middle East. The prevailing tradition is that, because of tribal rivalries, the ruling dynasties have tended to abandon the capital cities of their predecessors and establish themselves instead in newly founded cities to symbolise new spiritual and political power. This phenomenon has greatly contributed to the multiplication of towns in the Middle East.[25] For example, Baghdad, Marrakesh, Fez, Al-Kahira, Masnura, and Tlemcen owe their existence to the rise of the Abbasid, Almoravid, Irdrisid, Fatimid, Marinid, and Ziyanid dynasties respectively.[26] Al-Hasa town, one of the vanished cities of Al-Hasa Oasis, also owed its existence, development and decadence to the rise, development and decline of the Carmathian Dynasty in Al-Hasa Oasis, as will be examined in Chapter 4 of this study. Thus, these towns and others like them were established

to serve as capitals for particular dynasties.

The political factor was also responsible for the early appearance of the short-lived princely towns. On occasion a prince might find it desirable to remove his residence from the traditional capital and establish his own princely town so that he might escape from the direct supervision of his subjects. Samarra (near Baghdad), Raggada and Abbasiyya (near Qairawan) were creations of this sort. This type of town was normally deserted by the heirs of the founder and fell into decay.[27]

Commerce has also exerted an important influence in the urban life of the Middle East. The geographical location of the area made it a corridor between the Asiatic storehouse and the markets of Europe. The traders of the Middle East became the middlemen of the mediaeval world, so that the word Arab simply meant in some languages a merchant.[28] The commercial traffic in the Middle East led, indeed, to the rise and development of many trading centres, particularly in the Red Sea countries and also in the Maghreb. Towns, such as Al-Farama (Pelusium), Damietta, Rosetta and Tinnis, were founded after the decline of the commercial role of Alexandria. Old trading centres also found their geographical locations favourable and participated in the flourishing trade which followed the spread of Islam.[29]

Finally, the social tradition of the Arabs, which in early Islam derived from the middle-class citizens of Mecca, Taif and probably Medina, favoured the growth of cities. The population of these cities had acquired experience in conducting business even before the advent of Islam through living in trading centres on the caravan route, so their economic ambitions were concentrated within the framework of a city. Hostels for the accommodation of the nomads were, in consequence, quickly transformed into urban centres. This was one obvious reason for the extension of Islam.[30]

2.3 The Islamic City of Arabia*

Many cities in Arabia have very ancient origins, but few of them have been geographically studied, even in modern times. This may be due to the occupation of the local scholars during the Islamic era with Islamic studies and Arabic literature. In fact, if geographical information is required on Arabian towns and cities, it must be found between the lines of historical records or in the travellers' accounts of the nineteenth century, and sometimes it is mixed with legends. Consequently, it is necessary to bear in mind the limited reliability of such information, though great care has been taken to ensure that it is, in fact, reliable.

While most of the pre-Islamic cities of Arabia developed as stations or marketing centres along the caravan routes, their growth came to a halt when the importance of these routes declined due to the constant wars between the Byzantine and Persian Empires before the rise of Islam, as had already been explained. The advent of Islam in 622 AD gave new impetus to the development of many Arabian towns and brought a tremendous importance to the small caravan cities of Mecca and Medina (the ancient Iathrib or Yathrib), which were also trading centres on the caravan route between Syria and Yemen. With the flight of the Prophet Muhammad from Mecca (his birthplace) to Medina (his refuge), the fortune of the latter town started to grow together with the growing strength of the Islamic faith. Medina became the religious centre of the Prophet and his followers and then became the political capital of the new Islamic state (622-661 AD). It served also as the military centre of the great Islamic conquests. As Islam gained more ground, firstly in Arabia and later in the neighbouring countries, the importance of Mecca also increased dramatically, for the following reasons:-

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* This title deals only with the city and town confined to the boundaries of what came to be known after 1932 as Saudi Arabia.

1. Mecca was the original home of the Prophet Muhammad. He was born and brought up in this city. Most of his missionary life was also spent here.[31]

2. It was the place in which the first Surah (Koranic chapter) was 'revealed'.

3. It is the chosen direction (Qiblah) to which Moslems should turn in their five daily prayers.

4. Pilgrimage to it was prescribed in the Quran (Koran) as one of the five pillars of Islam. Every able Moslem should perform this duty once in his lifetime.[32]

5. It was the birthplace of most of the prominent figures of the first Moslem Empire.[33]

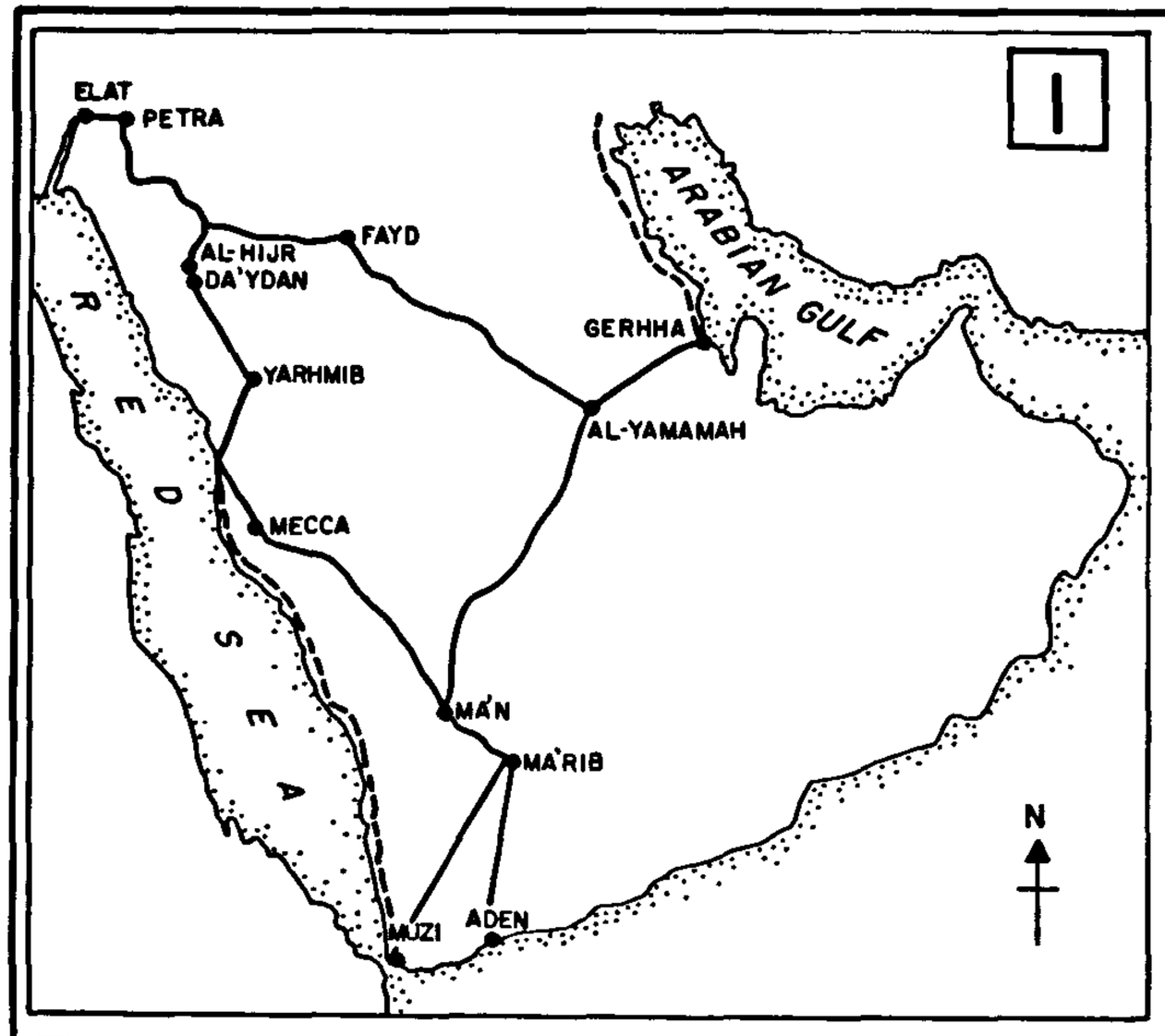
Probably each one of these facts helped to give Mecca a distinguished place above contemporary cities and won it a unique respect in the Islamic state. The combination of these facts has greatly enhanced the prestige of Mecca among the Arabs and has helped to keep its name alive in the heartsof millions of believers over the world till the present time. Thus, while the prosperity of Mecca depended largely on its religious functions, Medina relied heavily on being the political capital of the first Islamic state (622-661 AD) and its military centre. But during the Umayyad period (661-749 AD) the capital was moved from Medina to Damascus and then Medina had to rely on its religious importance as the second holy city in Islam.

Naturally, the removal of the capital from Medina to Damascus signified not only a shift in political power from Arabia to Syria, but also deprived the towns of Arabia of the prosperity generated by their being political centres. It was during the reign of Khalifa Uthman (644-656 AD) of the first Islamic state of Medina that the activities of commerce led to the development of Jeddah (Jedda) town near the sacred city of Mecca.[34]

Although Medina lost its former function as a capital to Damascus, it nevertheless made some gains during the Umayyad period. For instance, the city was supplied with a domestic water system. The great mosque was enlarged for the first time and minarets were introduced as a new characteristic which had not existed before. The area round the great mosque was paved. Several fine buildings were built for the governors of the city. In fact, some growth in the city was observed on both sides of the Wadi Al-Aqiq, where many palaces were built. These activities had so increased trade that Medina became a trading centre for the Hijaz district, and this further enhanced the growth of the city.[35]

However, with the removal of the capital from Medina to Damascus, the political importance of Arabia declined, and its towns had to depend for their development on the religious significance of Mecca and Medina.[36] The religious functions of these two cities led from the early days of Islam to the multiplication of routes coming towards them from all directions (Fig.2.1). Consequently, an increase in trade and revenue occurred which eventually resulted in the gradual growth of these cities.

However, since the function of the routes in this era was to link Mecca, the place of pilgrimage, with all the Moslem countries, Mecca became far more important than Medina. Other towns which appear to have been of some importance in this phase were those which served as stations along these routes. Such towns as Dhub and Al-Wajh on the Egyptian Hajj route, Tabuk and Al-Ula on the Syrian Hajj route. Fayd, the only important centre on the an-Najaf - Mecca Hajj route, and Al-Yamamah on the Omani-Mecca Hajj route. The towns that emerged along the inland Yemeni Hajj route were Bishah and Tarabah, whilst Gazan or Gizan, Al-Qunfudah and Al-Llith developed along the coastal Yemeni Hajj route. Finally, Buraidah and Unaizah also developed in the Al-Qasim district along the Basrah-Mecca Hajj route. Thus, the appearance of Islam not only increased the



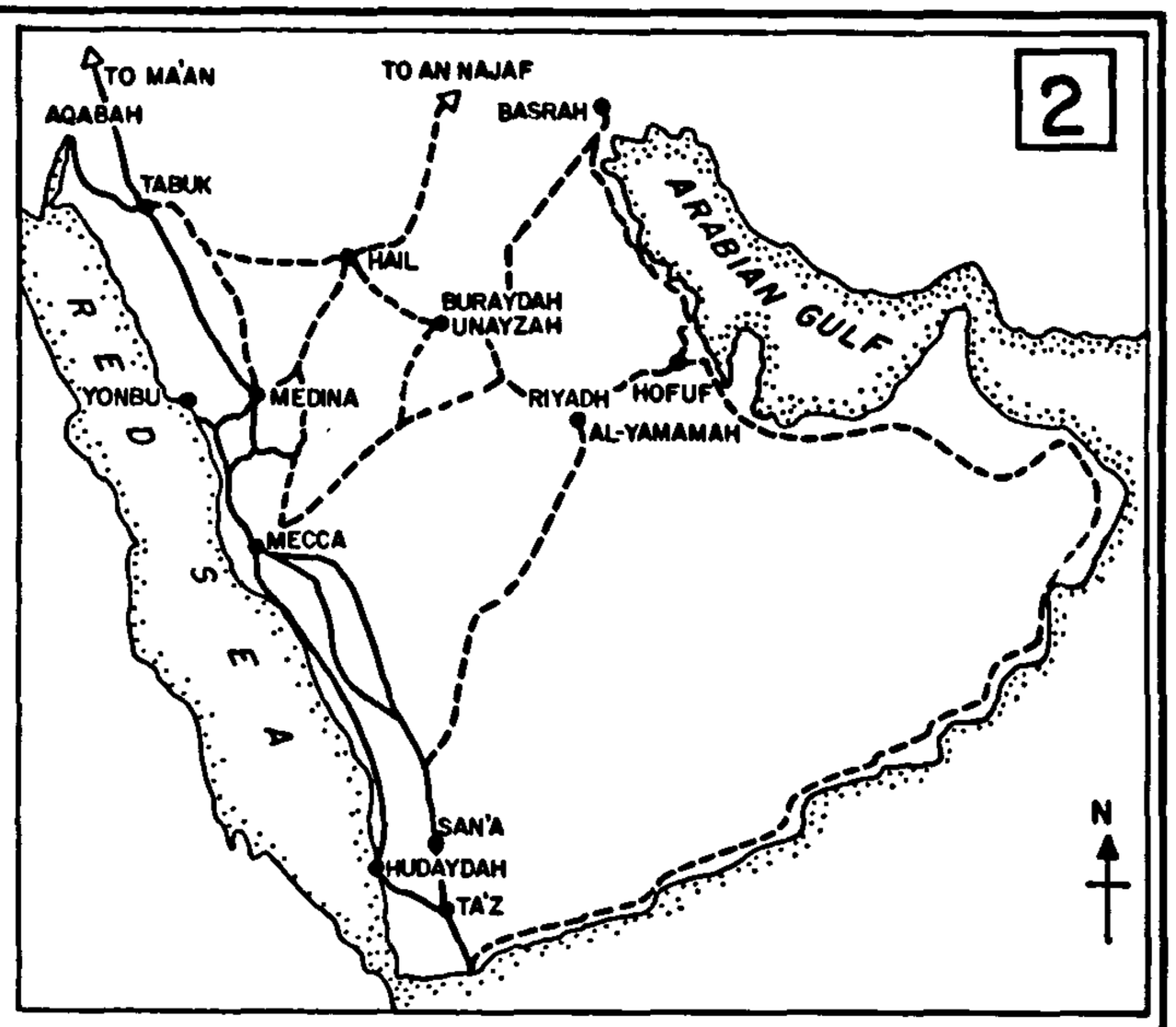


Fig. 2·1

1 TOWNS OF ARABIA IN THE 1930's

2 THE TOWNS OF ARABIA IN THE 19th. CENTURY A.D.

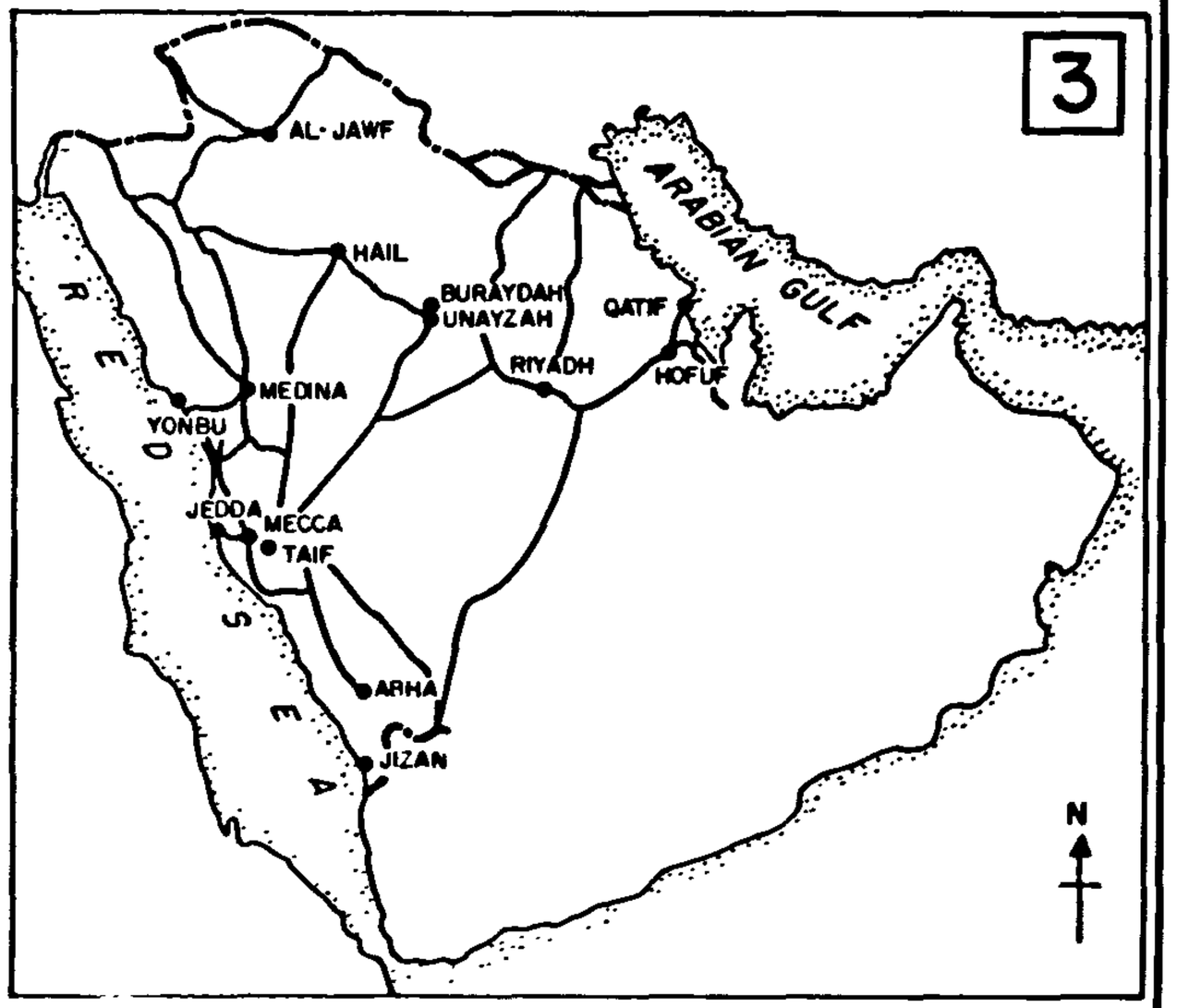
3 TOWNS OF ARABIA IN THE 1930's

MINOR ROADS

MAJOR ROADS

0 1000 km

MAIN TOWNS OF ARABIA BEFORE AND AFTER THE RISE OF ISLAM



After Abdo (1969)

number of routes across Arabia, but also increased the volume of traffic and the number and size of towns along the Hajj routes.[37]

Although the actual size of these towns is not known, the largest number of pilgrims was most likely to be found along the Egyptian, Syrian and Darb Zobaidah (Najaf - Mecca) Hajj routes, for the volume of traffic along these routes would reflect the concentration of population in Persia, the Fertile Crescent, Egypt and the North African countries which usually used these routes. The Yemeni Hajj route was also important as it was used by pilgrims from south Arabia and East Africa, as well as from the Yemen.

As the main function of these routes was to conduct pilgrims to Mecca rather than maintain trade, the function of such towns was to provide the necessities of life for the travellers who journeyed to Mecca and Medina either for visits or pilgrimage. To accommodate such frequent travellers along these routes, many houses were no doubt required in these towns, whilst food and water supplies were essential. Such activities must have attracted people from the nearby desert year after year to provide the services required in these towns. Consequently there must have been a considerable flow of people and wealth into these towns, whilst continuous contact with the various Moslem nations also introduced many new cultural elements.

Mecca, as the terminus of all traffic routes, probably became the first city of Arabia because of its religious importance, whilst Medina ranked as the second city. Tabuk, Al-Ula, Al-Wajh and Dhubah are likely to have been smaller towns, but they were of importance because they were rest stations along the Egyptian and Syrian Hajj routes which seem to have carried the largest number of pilgrims to Mecca.

The third category of towns included Fayd and Al-Yamamah, located in central Arabia on Hajj routes which did not carry such heavy pilgrim

traffic as those from the north and west. Fayd was the major resting place for pilgrims from Iraq. Persia and the countries of central Asia, whilst Al-Yamamah was the station for pilgrims from the Arabian Gulf area.

A fourth category of towns consisted of those situated along the Yemeni Hajj routes. Because of the more favourable environment, especially in terms of water resources, the towns along this route did not develop primarily to serve the pilgrims. The great number of settlements along these routes allowed the pilgrims to travel on foot and, indeed, as Abdo observes, this mode of pilgrimage existed until a few years ago.[38] This Hajj traffic did not contribure much to the development of the settlements and towns along these routes. However, the largest and most important towns, which may have gained a little from pilgrims, were Beishah and Turabah on the inland Yemeni Hajj route and Jazan, or Jizan, Al-Qunfudah and Al-Llith on the coastal Yemeni Hajj route. Because of high temperatures, high humidity and saline water on the coastal Hajj route along the Red Sea, this latter route was of only minor importance. Consequently, the towns which were located along this route were not as important as Beishah or Tarabah along the other Yemeni Hajj route.

When the capital of the Islamic state was moved again from Damascus to Baghdad during the rise of the Abbasid Dynasty (762-763 AD), the political importance of Arabia suffered further decline, for in the early years of the Abbasid Dynasty the people of Arabia, and particularly those of Medina, stood out against the establishment of the Abbasid state. But, as the Abbasid Khalifate expanded, it came to include, for the first time, many new countries. The number of pilgrims increased and, consequently, the towns along the Hajj routes of Arabia gained much during that period. Thus the Arabian towns located along the Hajj routes probably flourished and reached their peak during the Islamic

expansion in the early part of the ninth century AD. But these towns started to decline once more at the end of the ninth century AD as the Moslem Empire began to break up. This was followed by the struggle against the Crusader Occupation of the Levant and Jerusalem in the eleventh to thirteenth centuries and the Barbarian incursions into Persia (1220-1227 AD) and Iraq (1258 AD) by the Mongols. Syria, too, was devastated by the Mongols in the fourteenth century.

This period of instability obviously had repercussions on the numbers of pilgrims and led to a decline of the towns on the Hajj routes, which basically owed their existence and importance to the pilgrim traffic.

After the breaking up of the Islamic Empire, Arabia returned to tribal unrest. Traffic routes became insecure and Bedouin attacks on pilgrim caravans became common, especially when there was a weak central government in Baghdad or Damascus. This insecurity was greatest in the sixteenth century, when the Al-Hijaz and Al-Hasa districts were parts of the Ottoman Empire and central Arabia was left to the local leaders. Insecurity was also prevalent during the eighteenth and nineteenth centuries when there were wars between the various dynasties of Arabia, such as Al Saud, Al Rasheed and Al-Ashraf.[39] These disturbances led to the isolation of Arabia and resulted in local allegiances and a multiplicity of small political units called Amirates (Princedoms). These small Amirates were constantly at war. The chief of each Amirate was called an Amir (Prince) and used his father's town as capital for his Amirate, for example the Uray'er family ruled in Al-Hasa (Hofuf), the Mu'ammers in Uyainah, the Sharifs in Al-Hijaz (Mecca), the Saudis in Dar'yia, the Al Rasheeds in Hail, the Sayyid Al-Idrisis in Sabia, Sayyid Habbat in Najran, and Dahham Ibn Dawwas in Riyadh. Thus, as Wahba states, "Arabia was divided into innumerable small principalities, each ruled by a prince

who had little interest in common with his neighbours".[40]

Apart from Mecca and Medina, the only settlements of importance in Arabia were those that functioned as capitals and military centres for the Amirates. The Amirates mainly derived their incomes from custom dues, and Zakat (the poor rate), levied on agriculture and farming stock. Only in the Al-Hijaz were there additional sources of income, the most important ones being the annual taxes on pilgrimage, and the taxes on transport, mostly camels, to Mecca, Arafaf or Medina. Due to the insecurity during these times and the shortage of water for agriculture, revenues from customs dues and Zakat were very small: for example, those for the Najd (central Arabia) amounted to no more than £72,000[41] in 1920.

Thus, although the level of development of both Mecca and Medina, in Al-Hijaz, slowed down as a result of the declining number of pilgrims due to the disturbances,they remained the major towns of their Amirates and in the country as a whole. This was probably because of their religious status, through which they attracted additional revenues from commerce and in taxes from the yearly pilgrimage season.

The towns which served as capitals for the Amirates of the interior were affected by the transition from land route to sea route. From the fifteenth century there was increasing reliance on sea routes due to the opening of the Cape of Good Hope as a major trading route. This event led to European interest in the Indian Ocean. As a result, a transformation of the transit trade from Arabia to the Indian Ocean occurred. The prevailing insecurity in inner Arabia discouraged the use of the inland routes, and as a result pilgrim traffic by sea routes increased. Consequently, as the former inland Hajj routes declined in importance, so did the towns located on these routes, while small ports on the Red Sea and on the Arabian Gulf developed to handle pilgrims and other traffic. Towns such as Jeddah, Yenbo, Jazan, Al-Qunfudah, Dhub, Al-Wajh developed

on the Red Sea, whilst Al-Oqair, Al-Qatif and Jubail developed on the Arabian Gulf. Although many of these towns, such as Jeddah, Yenbo and Al-Qatif, claim a very ancient origin, it seems that they grew and developed as a result of sea traffic. In fact, Jeddah and Yenbo quickly became important ports due to their proximity to the holy cities of Mecca and Medina, becoming the principal pilgrims ports.

The function of the two ports near the holy cities was not only to receive the pilgrims coming from abroad, but also to accommodate them and to arrange for their departure to the holy cities of Mecca and Medina and their return to their own countries after the pilgrimage was over. These two ports also served as commercial centres for the western part of the country. Jeddah developed far more rapidly than Yenbo, especially as a pilgrim port. This was due to its closer proximity to the holy cities than Yenbo.

Thus, while the ports of the Red Sea and the Arabian Gulf prospered as a result of the increasing reliance on sea traffic. Mecca and Medina continued to be the most important cities in the whole of Arabia. The towns of the interior had virtually no political or economic significance until the emergence of the Religious Reform Movement (Wahhabi Movement) in central Arabia in the eighteenth century.

The appearance of the Wahhabi Movement, or the Religious Reform Movement, as the religious scholars of Saudi Arabia prefer to call it, was due to the many interpretations of Islam during the Mediaeval period. These interpretations were mostly of non-Arab origin and imposed on the Moslem community by newly-converted people such as the Turks. The original ideas of the religion were somewhat modified by this contact with other cultures and the value bestowed by the Moslem faith on the Arabian society had been almost completely forgotten.[42] Assah described the situation in Arabia just before the appearance of this Movement as follows:-

> ...the Arabian had returned to their primitive pre-Islamic concepts. The state had disintegrated and the social structure had broken down under the stress of clannish rivalries. Superstition had replaced the true principles of Islam at all social levels, to such an extent that many trees, caves, domes, tombs and mausoleums had come to be regarded as possessing religious sanctity, and the teachings of Islam which had governed society and held it together had become a thing of the past. Robbery and lawlessness had once again become the source of living in the desert, and life had become so precarious as to lose its value. It was as if Islam had never appeared in the Arabian Peninsula and had never left any traces of civilisation.[43]

As a backlash to this trend, a religious reform movement was formed in central Arabia during the middle of the eighteenth century by Muhammad Ibn Abdul-Wahhab, after whom the movement was later named. The aim of the new movement was to return to the true Islam, to the Islam of the Prophet.

Dar'yia, which was used as a base for this movement and as a capital for the Saudi Amirate, started gradually to develop as a religious and a political seat, and as a centre for wealth and administration. It became a focal point for the followers of the movements, though it had never before been an important urban centre.

The spread of the Wahhabi Movement throughout inner Arabia went virtually unnoticed by the outside world until the early years of the nineteenth century, when the movement sacked the Shi'ite holy city of Karbala (Iraq) in 1801, and when the Wahhabi expelled the Turks from Mecca and Medina in 1806. According to Winder, the Saudi Empire reached its height at the end of the first decade of the nineteenth century, and the doctrine of the movement spread over most of Arabia and reached as far as Damascus and Baghdad in Syria and Iraq.[44]

It seems that the prosperity which had been lost during the Mediaeval era of Islam by the towns and other settlements of central Arabia was now regained owing to the success of this movement in Arabia. Dar'yia became the most important town in central Arabia and probably reached its peak

of development during the second decade of the nineteenth century.

The other main towns of central Arabia were Hail, Buraida, Unaiza, and Shaqra. Hail, as has been mentioned before, was a seat for the Al Rasheed Amirate, the foe of Al Saud of Dar'yia, and was also the principal town of the Jabal Shammar district. Buraida and Unaiza have traditionally been important commercial centres in the heart of Arabia as well as markets for livestock. Shaqra also served as a marketing centre for the Washm district.

However, the prosperity enjoyed by these towns did not last long. On behalf of the Ottoman Empire, the Egyptian army attacked various parts of Arabia with the aim of destroying the Wahhabi Movement in its own home. In 1818 the invaders destroyed Dar'yia and sacked it. Dar'yia then lost its cultural role and never recovered. Then the attacking army completed its plan by invading the other towns and villages to ensure the end of the Wahhabi Movement. It has been reported that "in the towns, the forts and walls, even houses and palm trees, were pulled down."[45]

Although the Movement established itself again in Riyadh in 1824 and for the first time gave some importance to Riyadh, generally speaking the period between the destruction of Dar'yia in 1818 and 1843, when the Egyptian army was driven out of the country, was a disastrous period for the towns of Arabia, and in particular central Arabia. During this period economic activities were disrupted by the continuous warfare against the Egyptian army. Consequently, the old disturbances and tribal unrest of the Islamic Mediaeval era became also characteristic of the daily life of the people. Winder describes the situation in that period saying:-

> Feuds broke out, between towns and within towns. Bedouins resumed their despoiling raids on each other and even more, on the defenceless townfolk.[46]

What made the situation worse was, in 1821, the spread for the first

time of a cholera epidemic originating from India. Ibn Bishr (a local historian) states that "it first struck in 1828-29,...in the western district of Washm.[47]

The epidemic hit hard and, indeed, affected the whole area and the settled centres in particular. The result of this epidemic was described by Ibn Bishr, who witnessed this event. He says:-

> Great annihilation descended on them [the people] and disrupted the tribes and transportation. Dwellings were deserted by their occupants. If it [cholera] entered a house, it would not leave it as long as an eye was moving therein. The corpses of the people remained in their houses with no-one to bury them. Their wealth was left without any guardian. The towns stank from the corpses of men. The domestic animals and cattle roamed in the towns with no-one to feed or water them, so that most of them died. Some of the children died of thirst and hunger, and most of them fell in the mosques prostrated, because when their families felt the pain, they threw them in the mosques hoping that some one would come to save them. But they died because there was no longer anyone to save them. The towns were left empty because no-one would come to them.[48]

This epidemic also affected the pilgrims who came every year to the holy cities of Mecca and Medina. Winder stated that:-

> In April-May 1831 the pilgrims at Mecca were hit hard by the disease which they contracted from their Indian co-religionists. the havoc in Hijaz was frightful; reports of the number of pilgrims who died reaching 20,000. Of the Syrian caravan, about one-third never returned; of the Nejdi, one-half.[49]

The frightful news spread quickly throughout the Islamic world and prevented many pilgrims from coming in the next years. Thus the development of towns and other settlements of what is now called Saudi Arabia was affected either directly or indirectly by this disease. Together with the frequent attacks of the Egyptian army, which occurred again in 1836 and 1838, it caused the Arabian towns and villages to become either battle fields, fertile environments for cholera epidemics, or targets for attacks by marauding nomads. The result was the destruction of towns, as had happened to Dar'yia at the hands of the Egyptian army, or their depopulation, as had happened during the spread of cholera.

After the Egyptian army was forced to leave the country in 1843,

Imam Faisal Ibn Turki came back from his exile in Egypt and reconstructed the Saudi or Wahhabi state. He established justice, reinforced security and restored to Nejd some of its old prosperity. Towns were rebuilt and probably gained a little prosperity during Imam Faisal's rule (1843-1865). From 1865 till 1902, civil war raged between the sons of the above Faisal, starting immediately after his death. There were constant wars between the Al Saud and the Al Rasheed Dynasties and the other leaders of the Arabian Peninsula. Feuds, tribal unrest and the old hostilities broke out again between towns and within towns as well as between tribes and townfolk.[50]

These disturbances profoundly affected the stability and therefore the development of the towns in the country. Hail and Riyadh were the main power centres during this period and the administrative centres of central Arabia, but between 1887 and 1902 Riyadh lost its position to Hail and the latter became the capital and the dominant power in central Arabia.

When the towns of central Arabia are compared with other towns in the country, it appears that towns such as Mecca, Medina, Jeddah and Hofuf developed more than those of the interior, due to the latter's isolation and the instability prevailing there. Mecca and Medina probably gained much from the railway link with Damascus (1906) and so did Tabuk and Al-Ula, which were stations along the railway line. But these advantages did not last long due to the destruction of the railway in the First World War. Jeddah and Hofuf derived their importance from their position as commercial emporia for the whole country. The other main towns of the western part of the country were those ports along the coast of the Red Sea which developed because of the opening of the Suez Canal in 1869. In fact, the opening of the Suez Canal transformed the Red Sea into one of the world's major trading routes. Such towns as Yenbo, Jazan,

Al-Qunfudah, Al-Llith, Al-Wajh and Dhuba are all ports on the Red Sea. The inland towns of Taif, Najran, Turaba, Abha and Bisha served as trading centres for the nearby areas. The other main towns of the Eastern Province were Al-Qatif and Al-Oqair, which served as ports on the Arabian Gulf, and Mubarraz, the second most important in the Al-Hasa Oasis.

In 1902 the late King Ibn Saud was able to recapture Riyadh from Ibn Al Rasheed. From this date forward, Riyadh gradually started to emerge again as one of the important towns in central Arabia. Then King Ibn Saud realised the problems of Bedouins in the country and the urgent need for reform. He knew that he could not apply any project to solve their problems whilst they were still roaming the desert. He persuaded some of them to abandon their nomadic tent life for village house life. To put his policy into effect, King Ibn Saud built about 60 new settlements to accommodate the newcomers from the desert. The most important of these settlements were Artawyya, which was built in 1912 and populated mostly by the Harb and Mutair tribes. Then followed Ghutghut, whose people were mostly the Utaiba, then Dukhna, mostly occupied by the Harb, then Ajfar, mostly populated by the Shammar.[51] These settlements were called Hijar (sing.Hijrah) or 'departures', because the new settlers departed from their old nomadic life to adopt a better, settled one.

This kind of policy resulted in restoring law and order and stability in the relationship between townfolk and the tribes, who abandoned their nomadic life.

During the third decade of this century, the rulers of Riyadh overcame Hail in 1921, then Hijaz in 1925, and later Asir Province was incorporated with the other Provinces to form the Kingdom of Saudi Arabia. The country now prepared itself to enter a new phase, the phase of petroleum and modernisation.

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CHAPTER 3

MORPHOLOGY OF THE ISLAMIC TOWN*

3.1 The Morphological Legacy of the Islamic City

When the victorious Arabs of the Islamic conquest (7th century AD) took over numerous Hellenistic and Persian cities, the physical shape of these cities seems to have influenced the newly founded Islamic towns.[1] According to Hourani, Sauvaget went so far as to suggest that the physical shape of what we usually call the Islamic city was essentially that of the Greco-Roman city which had preceded it, only somewhat modified by the dynamic forces of Islamic society.[2] Indeed de Planhol stated that the Islamic city consists of "Islamic flesh upon a pre-Islamic skeleton".[3]

Certainly, Islamic towns did start from nothing and, as Hassan points out, they must have borrowed from antiquity various methods in the art of building towns.[4] In comparing a Muslim town with a Hellenistic one in the same location, it was found that the general features in the two cities were the same. The city wall continued to delimit an area which was organized around the ancient system of coordinates. The Greek agora (place of assembly) had been replaced by the Jami mosque. The Hellenistic checker-board structure had already become ineffective through the build-up of individual quarters. But although the gridiron plan was in decay long before the advent of Islam,[5] it was sometimes adopted by the builders of new Islamic towns. Samarra (Iraq) the south-western part of Aleppo (Syria), Lashkari Bazaar, Bost (Afghanistan) and various towns in Egypt and al-Maghrib exemplify the gridiron plan of classical times.[6]

Some of the Hellenistic institutions of urban life survived the Islamic conquest and formed a base for the later elements of the Islamic town. The Suq (market place) evolved from the colonnaded avenue, the Qaysariyyah

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*Literally, the term morphology means the study of form or shape, and urban morphology implies a study of urban formas it has evolved and taken shape in active relationship with the set of spatial factors and human decisions. Therefore, the urban morphology is defined in this study as the study of form of a city from within and without, its interior and exterior form.

and the Khan from the basilika, the hammam from the thermae or ancient baths, the courtyard-house from the Greek peristyle house. The bazaar is an ancient institution in the Middle East and preceded the coming of Islam.[7]

The major differences between classical and Islamic towns were the absence in the latter of the classical gymnasium and theatre. However, their social and educational functions were taken over by the mosque, and from the twelfth century AD by the madrasah, which became a special religious institution for learning.[8]

The Hellenistic rectangular plan influenced various towns of Islamic origin in al-Maghreb and Egypt. A town such as Rabat (Morocco) was built "on the model of Alexandria", with parallel straight streets intersecting at right angles, while quasi-rectangular plans appeared in the towns of al-Asker, al-Qatai and Al-Qahira. This is also true of the towns of Meknes, Taza, Qasabah of Marrakesh, and Fez - Jadid or New Fez as well as of the Mernid towns of the fourteenth century AD in Morocco, and of Tunisian towns.

The circular plan, which is believed to be of Assyrian origin,* appeared in the Eastern Islamic regions in the first Islamic centres of Kufa and Basra, in Abbasid Baghdad of Al-Mansur, and in some of the Islamic towns of Iran.[9] This circular plan or the oval one became a feature in the great majority of early mediaeval Muslim cities.[10]

Thus the Islamic town certainly owes much to the already existing forms of pre-Islamic city, but it should be emphasised that Islam stamped the city of the Middle East with various characteristics to create what is usually called the "Islamic City".[11] These characteristics, however, evolved, according to Grabar, in four phases: (1) before 650 AD; (2) from 650 to 750; (3) between 750 and 1100; and (4) from the twelfth century AD

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*Hasan, H.I., op.cit., Vol.2.,p.290, states that the Arab took the circular plan from Persia.

onwards, the pre-modern phase. He suggested that (a) "there was more than one type or model for the traditional city and that these types are definable in chronological succession". (b) The pre-modern city acquired its essential characteristics around the twelfth century AD, when the multiplicity of religious institutions was growing. Although this type of town also decayed, it did provide the contemporary town which followed with a nucleus of architectural elements which have been used for various purposes.[12]

However, generalization on the shape of Islamic cities is, in fact, a very hard task because of the variety of Islamic city types, such as the Mediterranean, the Mesopotamian, the South Arabian and the oriental type.[13] Innumerable variations are also found over so long a period of time. Aubin warns that there are many factors which affect the shape of a city. Some of these factors are physical while the others are human. Unfortunately, these factors cannot be dealt with here, since each city has its own set of factors affecting its physical shape. But in general, the shape of a city is usually related to the whereabouts of things needed by its inhabitants. For example, the site of water supplies and the location of cultivable land encourages town growth towards them, as each town must have an adequate hinterland and water. Streets and buildings will follow the contour of the land on which the town is built.[14] Wind direction in such a hot area sometimes influences the layout of streets, as was the case with Fatimid Cairo, "which had one great street running south-southwest to north-northeast in the direction of the prevailing summer wind". The giblah (the orientation towards Mecca) sometimes influenced the layout of streets, as can be noted in Meknes and Taza (Morocco).[15] Political decisions may also decide where a citadel, a fortification, a mosque or a palace should be built.[16]

Allowing, then, for such local variations, we can nevertheless give

a broad sketch of what a 'typical' Islamic city would look like.

3.2 The Morphological Characteristics of the Islamic Town.*

Before modern times the majority of Islamic cities possessed common features of plan and architecture arising from the needs, customs, law, economy and aesthetic principles of Islamic society.[17] They were mostly rectangular,[18] oval or circular[19] in their shapes. They were often surrounded by strong defensive walls, usually with battlements, and watch-towers built at strategic positions for protection against attack (Fig.3.1).

The town wall had been a pre-Islamic feature of classical towns.[20] In the Islamic town it functioned as a protection for the early moslem communities, who were dwelling among a population of unbelievers. It continued in the Islamic town over the centuries because of the political quarrels between the various dynasties, the Bedouin raids against these towns, and the piracy that prevailed along north African coast. It also provided a physical protection from the harmful conditions of the environment such as sand-bearing winds, which are a common climatic feature in this hot region. In fact, some cultivable land was even found inside the town wall.[21] The walls were usually thick, tall and in general built either of stones, if they were available in or near the site, or of sundried bricks. They were sometimes surrounded by a fairly deep ditch or moat for defense.[22]

In the town wall were several large gates linking the town with the countryside and the outside world. The positions of these gates were often influenced by the routes into or out of the town. These gates were commonly named after the destinations of the roads running through them, and thus marked a town's major economic and cultural contacts. Above the gates were military installations to guard the town from unexpected attack or unwelcome visitors.[23] The gates which were linked to the centre of the town by two or three main thoroughfares, were locked during the night for pro-

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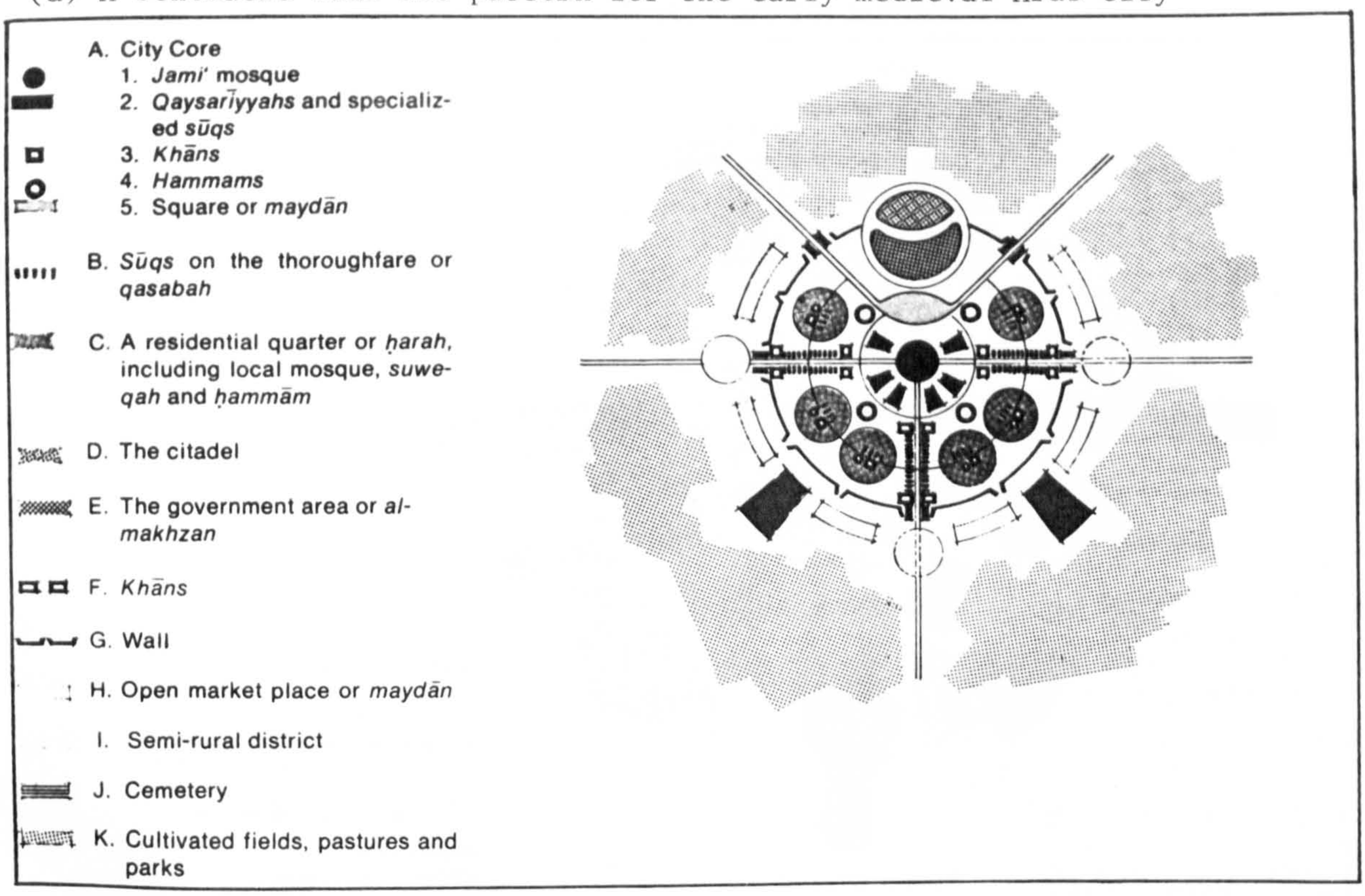
*Geographically, the Islamic town is here defined to include the urban experience of the Arabic speaking land of the Near East. The Turkish and Persian town are rarely mentioned in this study. An attempt to cover towns in the entire Islamic World would be so broad as to obscure any cultural distinctiveness and it would be, somewhat, comparable to coverage of "western" towns, from Santiago to Moscow.

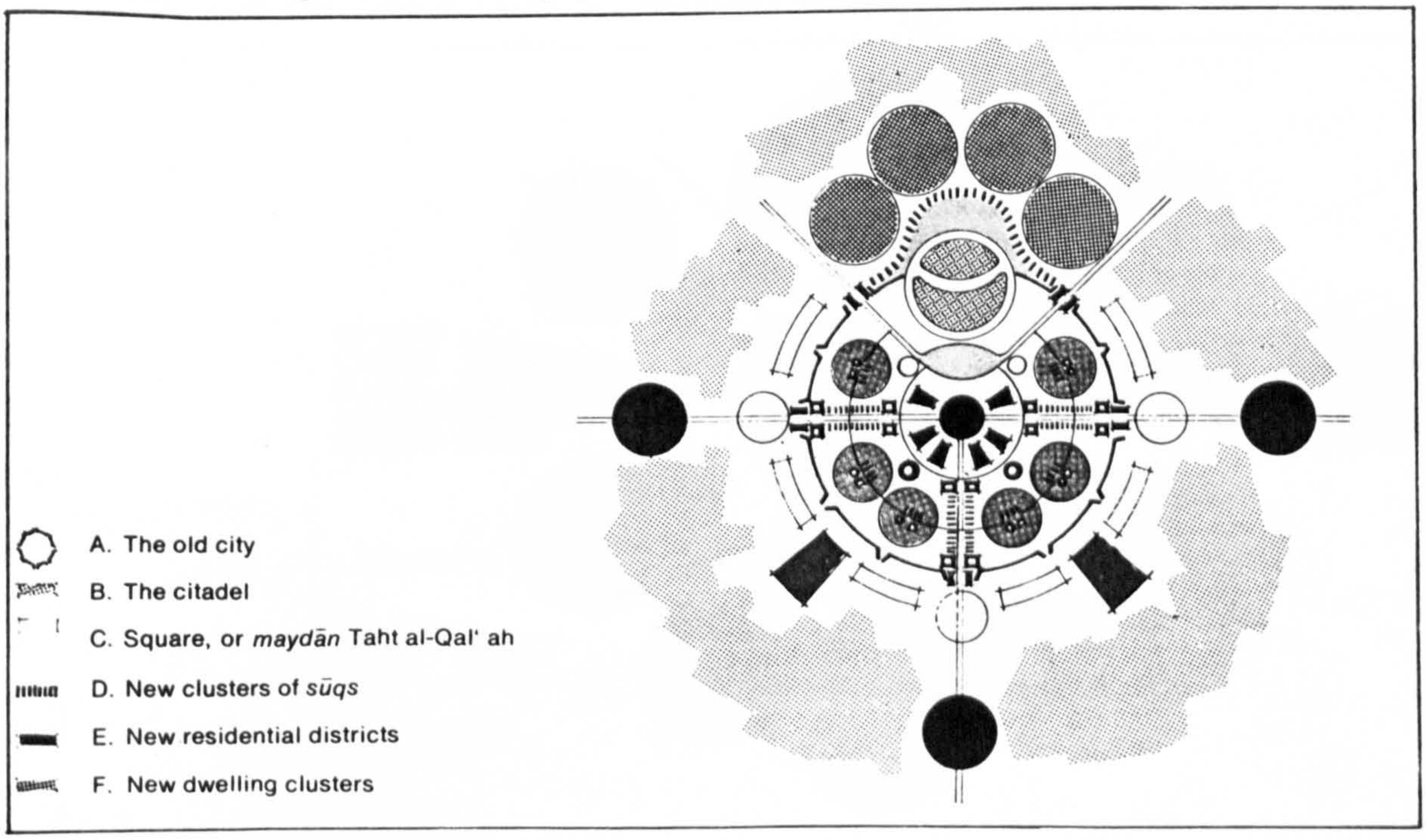
Fig. 3.1 Model of the Evolution and Development of the Middle Eastern City

(After Ismail,1972)

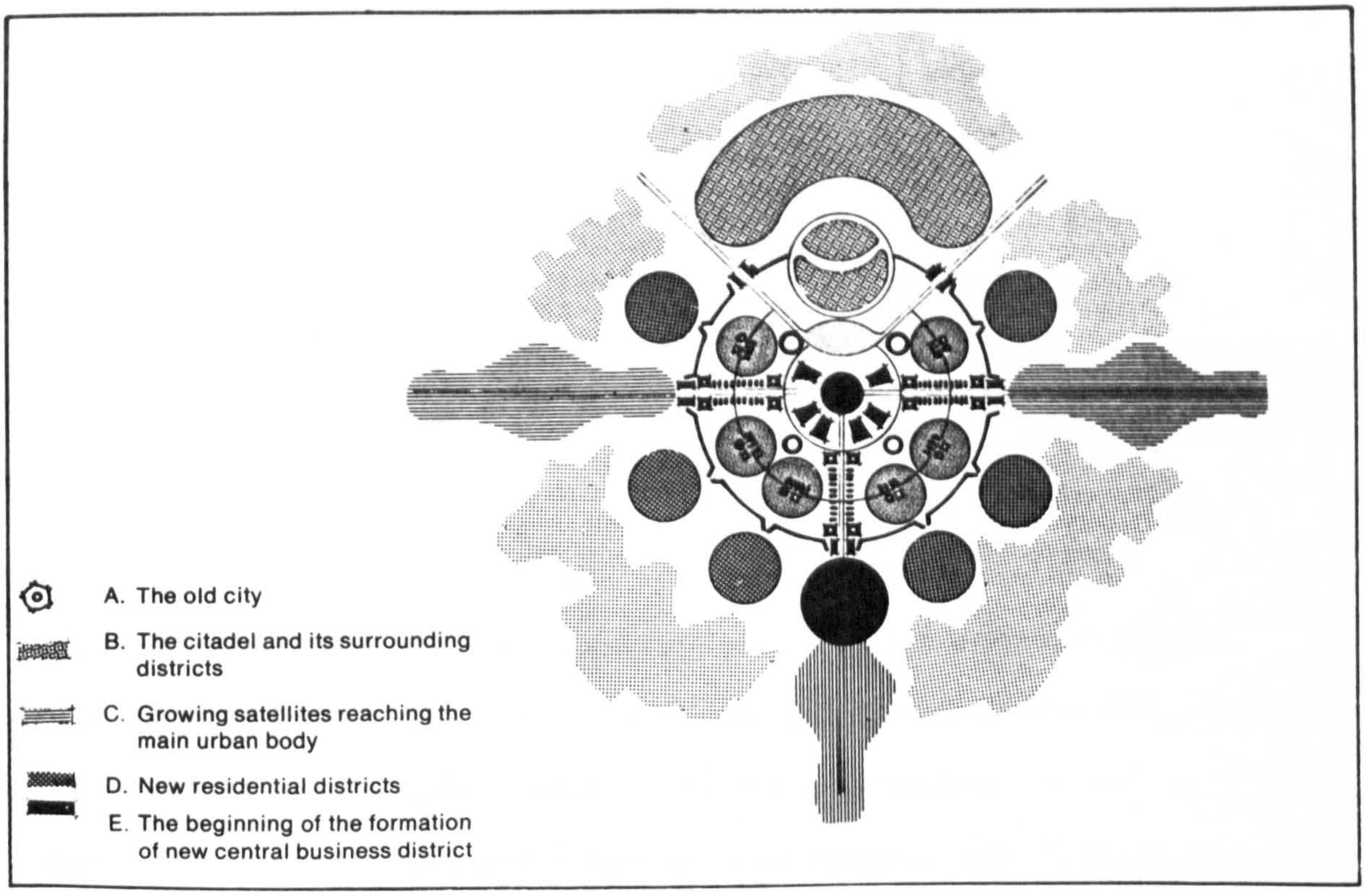
(a) A schematic land use pattern for the early medieval Arab city



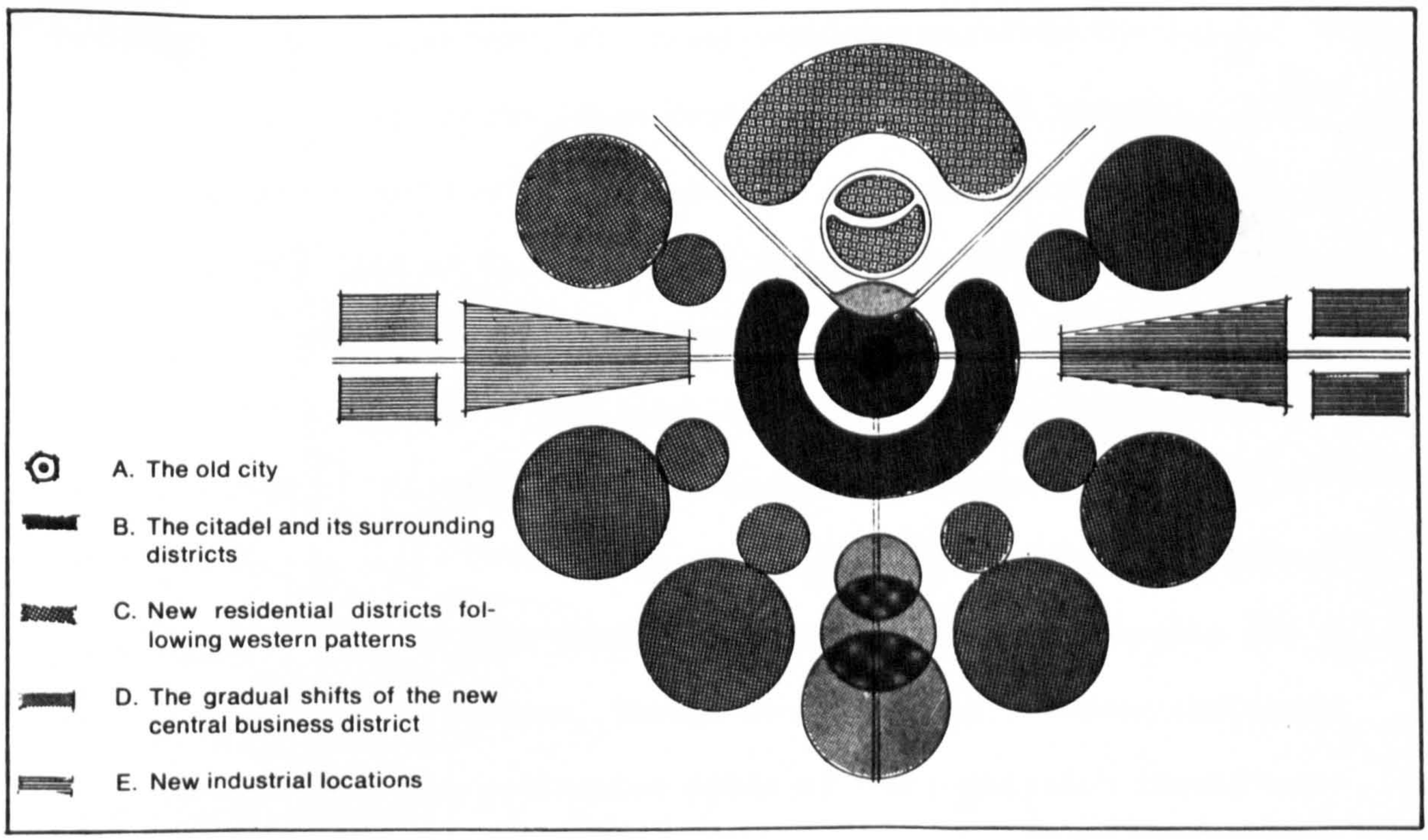
(b) Pattern of phase one of physical urban growth



(c) Pattern of phase two of physical urban growth



(d) Pattern of phase three of physical urban growth



tection. The main thoroughfares joined each other at the heart of the town and divided it into a number of quarters or harat. Apart from these main roads, the streets of the town were narrow, crooked and sometimes vaulted and often led to cul-de-sacs. They were suitable only for pack animals.[24] Fisher described the old streets of Jerusalem as "extremely confusing to tourists, who must find a way through dark alcoves to one of the four main gateways".[25] A distinguished American Arabist who was a student of modern North Africa lost his way in the winding streets of Fez (Morocco) and had to ask for directions though he felt from the beginning that he knew the city well enough.[26] Fathy explained how such a street pattern came to be universally adopted by the Arabs. He gave climatic reasons for the adoption of such streets. It is natural for people experiencing the extreme heat of the desert to seek shade by narrowing and orienting the streets, and to avoid the hot winds of the desert by making these streets winding, with closed vistas.[27] The adaptation of this sort of street plan was suitable for populations who had no vehicles and for whom porters and domestic animals were the only means of transport. Its compactness made it easy and even convenient to walk to any part of the town using the continuous shade provided by these narrow winding streets. Moreover, the shorter the town wall, the shorter the stretch of it that each able-bodied male in the population had to defend.[28] In addition these narrow winding streets formed a defensive net-work against any deep penetration by attackers. It seems that no particular one of these needs can be solely held responsible for the irregularity of such streets, though each probably had some influence. It is natural that the collective needs of the population should contribute to the irregularity.

While the origin of this kind of street pattern is obscure, it is said that the Prophet Muhammad himself prescribed a minimum of 7 cubits

(about 3.1 metres) as the width of streets to allow the passing of two heavily laden animals. In fact this width was applied in the case of Basra and Kufa towns by the Khalifa Omar (638 AD).[29]

The whole town was divided into various enclosures which radiated from the centre of the town towards its outer wall. Each enclosure was somewhat separated from the others physically as well as functionally.

The central enclosure was occupied by the palace or palaces of the ruler or his deputy and by the principal governmental buildings. It was in this enclosure that most of the aristocratic elite usually resided. As a spiritual centre, the Jami mosque (Friday Mosque) was often located at the heart of this complex[30] in a square (the agora or forum of pre-Islamic towns), entered by the main thoroughfars. The Friday Mosque is, in fact the religious as well as the political centre of the whole town. Here the male population of the town assembles weekly for the Friday Prayers and sermon, and here they hear the proclamations of their rulers. The blessing on the ruler each week by the Khatib or preacher constitutes an acknowledgement of his sovereignty,while its omission means his deposition. The mosque was also the intellectual centre of the town where the Ulama or scholars assembled to discuss and teach Arabic and Islamic learning. Between prayer times, students grouped in circles around their teachers, who leant against one of the many columns in the mosque.[31] The larger cities had impressive public buildings adjacent to the central area. For example "there were public fountains, gardens, public halls and academies of art and science". A characteristic of Islamic art was the minarets and towers. The minarets of the main Jami mosque of the central area and of other mosques throughout the town were the dominant feature in the skyline of the Islamic town as well as the religious symbol of all Islamic towns. They were seconded in size and impressiveness by the palaces of the ruler or his deputy and other buildings of the powerful and wealthy.[32]

In the immediate neighbourhood of the central enclosure is the business district which includes several markets for different commodities. It is striking to note that the concentration of several economic activities in a single suq or bazaar is a characteristic of all Muslim towns. Each economic activity was always concentrated in a single lane (bazaar) which was reserved completely for its purposes.[33] For example in the Business District of Medina (Saudi Arabia) there are many markets which specialise in selling particular commodities, for instance suq al-Qammashah (the cloth market), suq al-Habbabah (the grain market), suq al-Khudhar (the vegetable market) and suq al-Uyyashah (the bread market).

It seems likely, as has been suggested, that the origin of such arrangements may lie in the old tribal specialization in certain activities, and that this specialization was strengthened by later ethnic and religious association with specific commodities and professions. Perhaps, because these professions were the only source of income for those who practiced them, a guild system may have developed to protect the members' interests by preserving their professional secrets and keeping away competitors. This, with the obvious need for security, especially for jewellers, and for solidarity against official extortion, probably encouraged the concentration of each profession in a single row in the market. A more striking phenomenon was the density of the units making up the single suq or bazaar. Shops were grouped in small areas sometimes big enough only for the man and his goods.[34]

The arrangement of the different aswaq (Plural of Suq) or markets in the Islamic town usually conformed to the following pattern:

(a) Near the mosque was often located the suq concerned with selling candles, incense and other perfumes.

(b) Because the mosque is an intellectual centre, there was a suq for booksellers, a suq for bookbinders and in the immediate neighbourhood was the suq of leather merchants and slipper sellers, since all these markets

were somewhat concerned with leather goods.

(c) Beyond these markets was located the market for carpets and nearby was al-qaisariyyah, the market for textiles and certain household goods. The latter is the only roofed market, and is used for selling and storing precious goods, which can be locked away during the night and in times of unrest. It is said that the al-qaisariyyah of the Islamic town was originally developed from the Byzantine basilika and that the market halls of Antioch were its probable model.

(d) Next came the markets of the noisy and smelly pursuits such as carpentering, metal working, tanning and dying.

(e) Markets for saddlers, blacksmiths and other crafts primarily concerned with the countryside were often located near the town gates.

(f) Fairs, auction markets and other markets requiring more space were located inside or outside the town wall in spaces near the town gates.[35]

The number of markets and the varieties of goods depended largely on the size and nature of a particular city. If the city served as a seat of government and was relatively large, the number of markets and the varieties of goods were likely to be more numerous than in the smaller cities. The markets not only served the urban population and other customers, but also acted as international centres for trade and commerce. In fact the markets and the mosques were the only meeting place for the different classes of the town and the countryside. It was only in the market that the non-Muslim traders and merchants could meet and deal with their Muslim counterparts and other customers from the town, the countryside and the desert. Consequently, it was here in the Business District that caravanserais, and coffee houses as well as hammams (bathhouses) were built to serve the visitors to the markets.[36]

Next to the Business District was the residential zone, The characteristic feature of the residential pattern of the Islamic town was the

social and physical segregation of the various groups of inhabitants. The segregation was usually based on ethnic or religious affiliation, indigenous or immigrant status, social class and occupation. This, however, led to the division of the residential zone into various quarters (Arabic singular mahallah or harah or fariq). Each group of the population would occupy a certain quarter and preserved it for its own members.[37] There were probably few North African towns without a Jewish community. In fact the Jewish quarter was a common feature in most towns of southwest Asia. It was often located near the palace of the ruler as was the case in Fez, Tlemcen, Constantine and Marrakesh. Numerous other minorities existed in various Islamic towns, such as the Armenians, the Indians, Somalis and other Africans in the ports of the Red Sea and the Arabian Gulf region.[38] The holy cities of Saudi Arabia have a large number of Islamic minorities.

Occasionally, some of the various quarters were physically separated from the neighbouring quarters by a wall with gates which could be locked at night and during times of disturbance. Indeed, according to de Planhol, Marco Polo described seven walled quarters at Lut (an Iranian Oasis).[39] Medina (Saudi Arabia) still preserves this phenomenon in its old Haushs* or the internal subdivision of the quarters.

Each quarter was almost self-sufficient, and contained a small market and a mosque located in a strategic position.

The most important single unit in the quarter is the house. The Islamic house was always turned away from the streets towards a central courtyard and it had few openings on to the street, since this helped to reduce the heat, dust and noise to a minimum.[40]

The form and shape of the Islamic house was usually influenced by

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*The Haush consists of a group of houses built round a circular space. It has only one entrance controlled by a strong gate which was closed at night and at the time of disturbance. The back wall of these houses joined each other to form a circular wall round these houses for protection Each quarter contained several Haushs and each Haush has its own defence arrangements. This system existed in the western part of Medina.

Islamic philosophy and tradition, by the available building materials, by family social life and climate.

Islam is hostile to luxurious and lofty buildings, which are the symbols of pride and arrogance, so it encouraged the use of fragile and perishable materials in house building. Thus the low-built house became a general early Islamic characteristic. It was only in the big cities that this rule was not completely observed, in later periods because of the high population density which required vertical expansion and thus the building of tall houses. Nevertheless the need to shut out the dusty hot winds of the desert encouraged the persistence of the pre-Islamic house with a central court or patio.

The need of the Islamic family to secure a maximum degree of privacy resulted in the division of the house into two parts. Male friends were received in one part, separated by doors or overlapping walls from the other part, which was considered a private family sanctuary. Some houses were even planned with two courtyards, one for men and the other for women. Two store houses were also built around a central courtyard where the men received on the ground floor, while the upper floor was reserved for women.

In general the house received its light from the inner courtyard. The window and roofs were built in such a way as to prevent intrusion into the intimacy of neighbours' lives. The structure of the house was usually designed to cope with the climatic problems of the desert. Correct orientations were observed in the general arrangement of the rooms, which opened on the courtyard facing the direction of the cool breeze. The courtyard itself acted as temperator for the house, for it had a fountain and sometimes a tree which together created cool and pleasant conditions in the house in sharp contrast to the hot burning street outside. Various parts of the house were even designed to suit different times in the day and in the year.[41] For house ventilation and indeed for bringing more cool breeze

into the house, the Arab created a device called a malkaf or wind-trap. It is a shaft rising above the rest of the house and facing north. The north and west side of the upper part of the malkaf were left open to catch the prevailing cool breezes from these directions and funnel them through a Qa'a or large tall room and then into the rest of the house. The air escaping through the lantern on top of the house is replaced by fresh air coming through the malkaf, thus creating a draught even when the air outside is motionless. With such ventilation it became possible to disperse with ordinary windows and to place the Qa'a in the middle of the house surrounded by other rooms for protection against the heat coming from the outside. Rooms which could not be provided with a malkaf were often provided with carved wooden screens called mashrabiyyah placed across large windows. The mashrabiyya was designed to break up the strong light of the sun and reduce the glare without reducing the movement of the air.[42] Thus the malkaf, the mashrabiyyah, and the courtyard with its cooling elements created cool and pleasant conditions in the house.

A significant trait of the Islamic house, which helped to create the urban scene, was its simplicity from the outside and its richness in decoration and comfort from the inside. This signifies the dweller's appreciation of comfort and his neglect of external appearances. The grouping of houses along the narrow winding streets also provided good shade for pedestrian and reduced the wall area exposed to the sun at any one time.[43]

Finally, beyond the residential area came the military zone or the "citadel quarter" which always occupied a strategic position from the military point of view. The citadel quarter was always kept separated from the rest of the town's population. In some cases the ruler and other members of the ruling elite built their palaces in this quarter, when they considered the central area in the heart of the town too congested. Some

of the squatters who had recently arrived in the town also resided in this quarter. Whilst some of the immigrants were accepted as inhabitants of the town, others would live outside the town wall somewhere near its gates.[44]

The cemeteries of the Islamic town were always located outside the town wall near one of the town outlets. Beside the Islamic cemetery there were always separate cemeteries for the religious minorities of the town if it had any. The Christian and Jewish cemeteries were always located outside the town wall near the quarters inhabited by these minorities.

Before modern changes, all Islamic cities had general similarities. The narrow winding streets and the arrangement of buildings were similar everywhere and the plan of one city could be taken for that of any other. Buildings and districts might seem to be arranged haphazardly, but in fact there is a structural and functional unity underlying them. The social pattern is physically visible in the various quarters, the main public buildings, the palaces of the ruling élite, the houses of notables and of the rest of the population. All these areas were related to each other and to the market which was devoted to various trades.

Although the building of a city extended over a long period with different owners and builders, the character of the city was always maintained. This continuity of character could not have been achieved without tradition, nor without an ability to adopt various methods to deal with the natural local environment.[45] Each structure in the Islamic town has its own reason for existing and a logical arrangement in relation to other parts of the town. Nothing exists by chance or is built haphazardly.

The fine Islamic architecture exhibited often in the public buildings is indeed a reminder of the golden age of Islamic civilization. The problem of water supplies for houses,mosques and gardens was dealt with skilfully by both Persian and Arab town builders. The houses of old Cairo were each provided with running water. Many towns in Iran still preserve

the old qanat system which sometimes terminated in the market, the mosque or in the house of the owner. Indeed it was in use in Medina (Saudi Arabia) till the 1950s. The narrow winding streets often created problems for the movement of people and laden animals, but relief was always offered by the numerous small squares and gardens and courtyards with their fountains and running water. The Islamic city evolved in an Islamic environment and embodied Islamic culture. "The centrality of the great mosque, the high status accorded to craftmen and merchants, tolerance of minorities and the importance of family and kinship groups, all arose out of the precepts of Islam and more or less directly affected the morphology of the town."[46]

Although there is structural similarity between the Islamic towns, they also exhibited a rich variety in their urban scenes. The geographical contrast between the various Islamic regions provided many types of buidling material, oven-fired or sundried bricks or mud, which commonly had variations of colour according to their parent materials. "Light brown and red" bricks prevail in South Morocco, while "every shade from grey to dark brown" can be seen in the Nile valley. Baghdad city is soft yellow in colour. This contrast is also evident in the stone-built towns. Black basalt stones are used in Diyarbakir (Turkey), while the "speckled grey alabastrine stone is extensively used in Musl (Iraq). Old Jerusalem has white limestone.

There are also variations of building style from one region to another. The sloping roofs of Turkey differ strongly from the flat roof tops of most Arab and Persian towns. North African towns seem to have more in common with Southern Europe than with the rest of the Islamic world. (The pre-Islamic skyscrapers of South Arabia, on average six stories high, are in fact a special case.)[47]

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CHAPTER 4

MODERN CITY DEVELOPMENT IN THE MIDDLE EAST WITH PARTICULAR REFERENCE TO OIL

4.1 The Effect of Oil on City Development

A. The Causes of Change

a. Economic Improvement

Thirty to forty years ago Saudi Arabia, Libya and, perhaps, Kuwait, "had some of the lowest living standards of anywhere in the world: now Kuwait shares with the U.S.A. the highest per capita income (of over $4,000 [£2,247.19*] per annum) of any country - and States such as Abu Dhabi and Libya are not very far behind".[1] In 1930 Saudi Arabia had only a total annual income of about £150,000 from which to maintain all government activities.[2] In 1973 revenue from oil reached $4,340 million[3] (£2,438.20 million) and in 1974 it jumped dramatically to $22,573.5 million[4] or £12,681.74 million as a result of the almost four fold increase in the price of oil in October 1973. For many countries in the Middle East and North Africa, oil revenues provide the main source of government income and sometimes they are the only source of income.

The oil producing countries in the region can now establish social service scehems, choosing the very best from all over the world, and many oil companies, such as the Aramco Oil Company in Saudi Arabia, provide low cost housing for their workers. Iran, for example, has financed major improvements which now sustain an annual growth rate of 7-10%. In Kuwait there is a car per three inhabitants while some parts of the region have the most luxurious hotels in the world and probably the most expensive anywhere.

Oil wealth has been used to finance numerous projects in various parts of the region either directly through the oil producing countries

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*One sterling pound = 1.78 American Dollars

themselves or indirectly through financial 'aid' scehemes of various kinds, such as the Kuwaiti Fund for Arab Economic Development[5] and, more recently, 'The Arab Economic Fund'. For instance, between December 1973 and January 1975 alone, the Arab countries and Iran invested in their own countries over $38 billion[6] (more than £21.3 billion). Most of this amount was spent on infra-structure projects such as building sea-ports, airports, bridges, sewage and water systems, electrification, communications, education and the health services, which includes two large hospitals and 100 clinics for Saudi Arabia. These heavy investments in the infra-structure are extremely significant for they have helped to modernize all sectors of the economy and improved living standards. They are also forming a base upon which further developments can take place at a rapid pace.[7]

The flow of capital from oil revenues to the neighbouring non-oil producing countries has had, on a smaller scale, a direct impact on the rate of growth and development of the cities in the countries concerned. They have benefited from the enormous oil wealth through both the personal investment of Kuwaitis, Saudis etc., and through revenues paid to their governments (Jordan, Syria and Lebanon) for the concession of oil-pipelines, from Iraq and Saudi Arabia.[8]

b. Migration and Urbanisation

The oil activities in the region have stimulated a large population movement to the oil centres and to the other cities to work directly in the oil industry or in the services provided in the cities by the oil money. For example, the immigrants called non-Kuwaiti in official statistics, at present out-number Kuwaiti citizens in their own country and in 1965 immigrants constituted 77% of the total labour force.[9] In 1969 the United Nations estimated that 25-50% of the residents of the Middle Eastern city were born elsewhere.[10] Various factors are re-

sponsible for this migration to the oil centres and other newly prosperous cities in the region. Firstly, there is well-paid employment at all levels and a demand for a great variety of skills. Secondly, the standard of health and education there is higher than the average for the Middle East as a whole and, above all, they are free for all. Thirdly, low import duties and lack of protective tariffs in the oil producing countries make foreign goods, such as radios, televisions, cameras, cosmetics and others, both cheaper and more readily available than in other countries of the region.

These advantages in the oil areas are strengthened further by disadvantages in the immigrants' own areas which encourage them to seek better opportunities elsewhere. These disadvantages include (1) low incomes. This is probably true of neighbouring areas to Kuwait such as southern Iran, southern Iraq, Yemen in the case of Saudi Arabia, and perhaps Egypt in the case of Libya. (2) Political factors are considered active in encouraging migration. For example, the establishment of the State of Israel in 1948 and the subsequent wars with neighbouring Arab countries, led to a large population movement from Palestine to various Arab countries, particularly to the oil areas.[11] The civil war in Yemen (1962) and, at present, the civil war in Lebanon constantly encourages a population movement towards more prosperous and secure areas of the Middle East.

Migration has occurred not only between the oil and the non-oil countries of the Middle East, but also between the rural and urban areas within each country. Poverty, poor health and education facilities, lack of electricity and modern transport and communications, slowness in the implementation of development projects and many other factors have perhaps driven people from the countryside to the city. The demographic pressure on the land has also played a role in this popu-

lation movement from rural to urban areas[12] and, in addition, skilled labourers and businessmen from different parts of the world have recently been attracted by the oil boom and converged on Middle Eastern cities particularly those in the oil areas.

In 1965, 21% of the population of Iraq resided in the city of Baghdad and in the case of Jordan 17% resided in Amman the capital.[13] In 1965 Kuwait City contained over three-fifths of the total state population.[14] According to an official estimate 14.9% of the total population of Egypt in 1970 resided in Cairo alone.[15] For Saudi Arabia, there are no available figures, for the census carried out in 1962-63 has not yet been published but this phenomenon is clearly reflected in the failure of the town planners reasonably to predict the population growth of the Kingdom towns at a given date. The population growth in the towns in this country has reached far beyond expectation, probably because of the influx of people from the desert or the rural areas to seek employment there.

Oil exploitation in the region has no doubt accelerated the immigration process to the urban areas at the expense of the rural ones. The oil industry has focussed the direct employment opportunities in the oil camps, at tanker terminals and refinery sites and at the oil companies' headquarters. Indirect employment opportunities are also more readily available in the capital cities as a result of heavy government expenditure. Examples include Iraq, Iraq, Kuwait, Qatar, Bahrain, the United Arab Emirates, Saudi Arabia, and Libya.

Owing to a lack of available census data and inadequacies in that which does exist, together with ambiguities in the use of the term 'urban'* and various other reasons, it is impossible to assess accurately

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*The urban place is defined in Saudi Arabia as a place which contains 4,000 inhabitants, in Iran 5,000 and in Turkey it is 10,000. Egypt and Syria use administrative status as criteria for the urban place. (See Beaumont, P., and others, op.cit.,p.205.)

the urban growth in the region. However, using the various definitions, K.Davis estimated that in 1970 nearly 80.4% of the population of Kuwait was urban, 74.5% for Bahrain, 68.4% for Qatar and 44.9% for the United Arab Emirate, all oil producing countries. The urban percentage for non-oil producing countries is much below the figures quoted above. For example, they are 31.2% for Turkey, 32.8% for Morocco and only 6% for Yemen Arab Republic. The rates of urbanization in the oil countries are even higher than the total for southwest Asia (35.6%) or North Africa (34.5%).* This high urban percentage can probably be explained largely in terms of rural-urban migration which has been accelerated by the oil boom or by natural increases in population. This latter would seem to be a very active factor in the urbanization of the Middle East. The mortality rate has been steadily declining here since the Second World War, particularly infant and maternal deaths, while the fertility rate of 44-50 per thousand is even higher than the world average of 33 per thousand.[16] The higher natural increases perhaps reflect the better living conditions which have become possible only during this era of oil.

Persistent rural-urban migration and the high natural increase in the population might suggest that the Middle East and North Africa are over-urbanized in the sense that there are many unemployed migrants in the cities and towns of the region.[17] However, urbanization in the Middle East and North Africa increases at an annual rate of 4.5 and 5.5% which exceeds the world average of between 4 and 4.5% per annum.[18] This high level of urbanization has resulted in an annual urban growth in the cities and towns of the Middle East of 5.0% for the cities of Syria and Lebanon, 5.8% for Iraq and Jordan and over 9.0% for the cities and towns of Saudi Arabia and the Gulf States. These higher urban growth

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*Percentages have been quoted in Beaumont, P., and others, op.cit.,p.205

rates are related directly or indirectly to the development of the oil industry in the region.[19]

The oil operations of the Middle East have resulted in the establishment of several new towns in the oil areas. (The impact of oil on the growth of settlements will be dealt with later in this chapter,) and in addition, many older towns have expanded. Abu Dhabi, for example, has been transformed, within ten years of the first shipment of crude oil, into an agglomeration of concrete buildings and roads designed to international standards while Kuwait experienced a similar transformation even earlier. Various new towns with low cost housing have been planned and constructed at Issa (Bahrain) for some 35,000[20] workers, at Dhahran (Saudi Arabia) the Oil Company headquarters, at Abadan (Iran) the oil terminal and many others. In fact many towns in Saudi Arabia, the Gulf area and Libya are growing rapidly in size and numbers as the effect of oil industrialization is widely felt.[21]

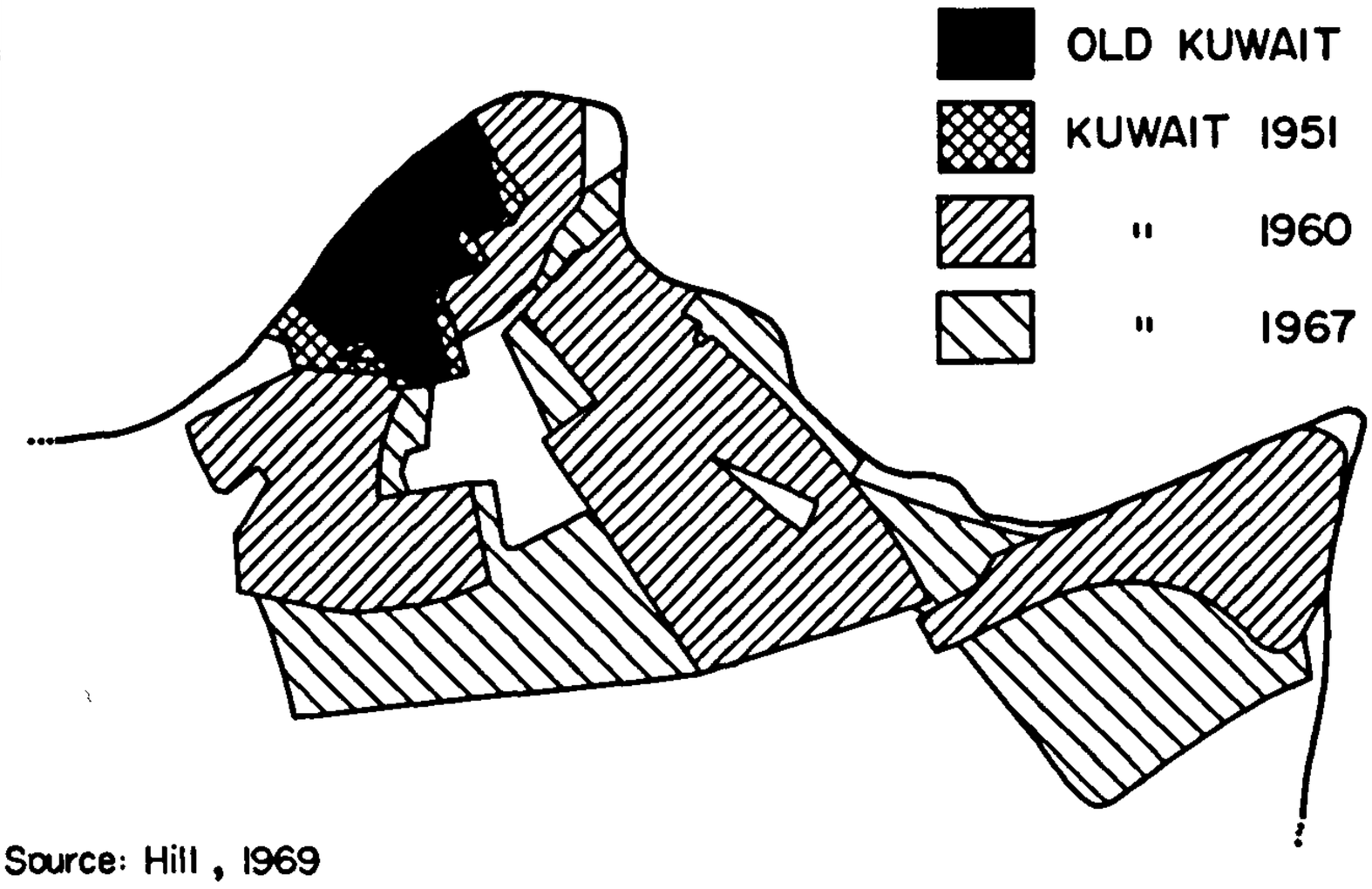
B. Town Response to Change

To cope with the rapid increases in migration to the urban areas and the natural increase of their own inhabitants, towns have expanded beyond their old walls. For example, Beirut has grown from 107,000 square metres in 1945 to 1,181,000 square metres in 1966,[22] while the old build-up area of Tehran, which was 3.8 square kilometres, had expanded by 1958 to 19.5 square kilometres.[23] The expansion of Kuwait and Riyadh are clearly marked in Fig.4.1.

As a result of this rapid expansion unplanned groups of settlements have appeared in various parts of each town particularly at their outer margins, where shanty towns or bidonvilles began to form broken rings around the old cores, occupying those parts of the old town centres previously considered unsuitable for house-building, or extending along the main roads which connect one town with the next. There are many examples

RECENT DEVELOPMENT OF KUWAIT AND RIYADH

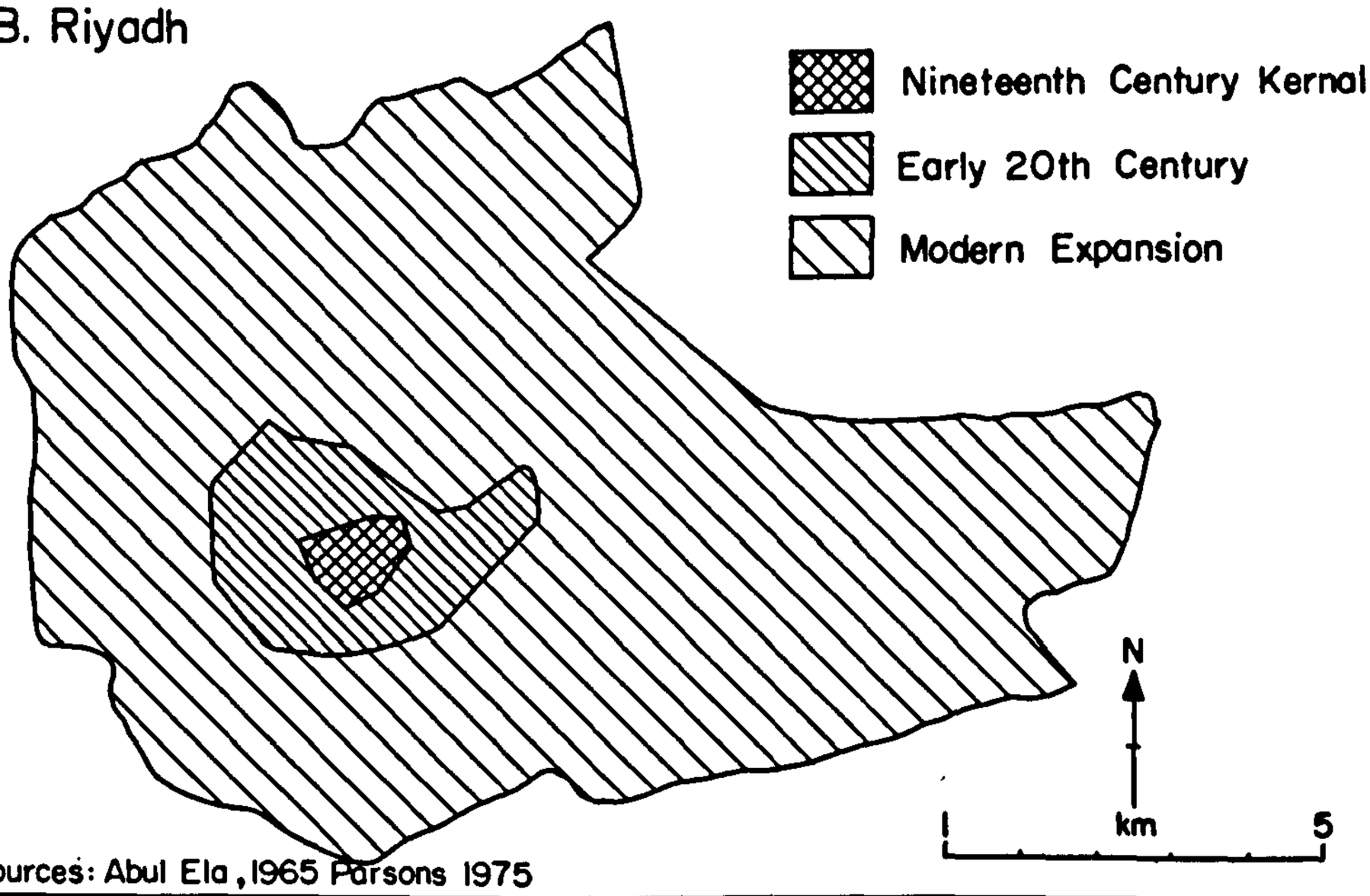
A. Kuwait



Source: Hill , 1969

Fig. 4·1

B. Riyadh



Sources: Abul Ela , 1965 Parsons 1975

of such phenomena throughout the Middle East. For example, there were an estimated 47,000 reed and mud huts in Baghdad in 1956 which rose to at least 55,000 in 1963,[24] and although figures are not available, Abu Lughod reported similar findings in her study of Cairo.[25] For Kuwait, it was estimated in 1974 that 18,000 or 16.0% of Kuwait housing units were ishash or shanty town shacks[26] while in a 1965 study, Abul-Ela reported the presence of shanty towns in Riyadh, the capital of Saudi Arabia.[27] Indeed, observation during 1972-73 and also in 1975 showed that ishash or huts were still present in scattered pockets in most of the oil towns and other centres of Saudi Arabia.[28]

Shanty towns were usually built on unauthorized sites using every available cheap construction material and inadequate techniques. The inhabitants of each 'settlement' often originated from one particular village or district or had a similar tribal background and the physical structures of such settlements are often based on a village pattern. They have, in fact, disturbed not only the old structural fabric of the traditional town but also caused enormous problems for the local authorities. Land ownership problems, traffic problems, health risks, the need for public services, etc., required urgent solution through serious planning and powers of enforcement not only to solve the existing difficulties but also to prevent them happening again in the future. Unfortunately, due to lack of experience in dealing with such matters, the planners either came up with inadequate solutions which sometimes made the situation worse, or they tried to apply solutions from abroad which proved completely unsuitable to the problems of Middle Eastern towns and in both cases, the old town structure became further damaged. Advice on town planning is frequently sought from other countries, Kuwait City being a good example of this, as reported by Hill.[29]

C. Physical Changes of the Town

Recent changes in the physical structure of the traditional Islamic town were largely functional, arising from the economic changes brought about by the development of the oil industry in the region.

These new economic developments led to a rise in the urban population and the old commercial quarters of the towns became inadequate to cope with the increased volume and variety of demands of a large community,while residential areas spread further away from the commercial zone causing expense and inconvenience to those who had to travel some distance to the centre for various purposes.

In order to function properly, the old commercial areas of the towns changed in various ways. Firstly,they expanded horizontally often at the expense of older institutions and residential buildings which were sometimes converted into shops or office blocks. This can be seen in some parts of old Jeddah in Saudi Arabia.[30] Secondly, some of the larger commercial establishments which could not find economic sites in the old commercial zone have moved to different parts of the town, so that the larger towns in the region now have several commercial centres as noted by Clark and Costello[31] for the Iranian towns and Hill[32] for Kuwait town.

Shops in the Middle Eastern town spread out beyond their old confines and dealers and brokers, handling foreign goods, took over the ground floor of houses and mosques[33] in the commercial zone and along the newly opened avenues which cut through the old structure of the town. This unprecedented phenomenon can also be seen nowadays in the larger towns of Saudi Arabia, such as Dammam, Riyadh and Jeddah.[34] The old bazaars or Suqs were no longer multifunctional; their upper floors, which previously served as living quarters were now used as workshops for craftsmen producing modern ready-made goods for the Suqs. Although

commercial activities are still in many cases focussed in the old bazaars, as in Kashan[35] (Iran), in some other cases the change was severe enough to cause such bazaars to move to other sites as happened in Kermanshah[36](Iran).

A great deal of new building has taken place in the old centrally situated commercial areas (see Chapter 3), including both public building and multistorey blocks for business and residential purposes and, consequently, the old distinction between those areas and the areas given over to housing or other services is not as clear-cut as it used to be in the old town.[37]

This concentration of services and business in the core of the old towns has made such centres a focal point for all the traffic coming in from the various suburbs, and considerable problems have arisen as in such towns as old Kuwait,[38*] where urgent measures needed to be taken in order to accommodate the increasing number of vehicles attempting to reach the city centre. Unfortunately, new plans were simply superimposed upon the old town structure[**] without any consideration for the old historical buildings. New straight, wide streets designed for the motor car, which appears to dominate modern town planning, have been driven through the old quarters inevitably ruining their historical character[39] while new commercial and residential multistorey buildings along these new avenues obscure any old buildings[40] which might have escaped demolition. Examples of this may be seen in Tripoli.[41]

The effects of such plans on the old structure and morphology of the Middle Eastern city have been so extensive that sometimes only small parts of the old towns have survived as, for instance, has been the case in Cairo, Riyadh, Kuwait and Baghdad. However, elsewhere the physical

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*For example the number of cars in Kuwait City rose from a handful in 1955 as stated by Shiber (p.175 in Brown, C.L., 1973) to 94,908 cars in 1966 as reported by Hill (1969,p.151). (For reference details see the Bibliography,p.

**See Fig. (6.5) in Beaumont, P.,and others (1976), p.200

changes have been moderate so that at least some parts of the old town wall may have remained substantially intact although often these have been removed and replaced by ring roads.[42]

Many old houses were demolished in the successive town plans but new ones were also built in the surrounding areas. The design of the newly built houses has also changed from what Fathy called the "introverted type depending on the gardens and courtyards for insulation and ventilation, to the extroverted type, depending solely on the street for sun and air".[43] That is to say, the traditional house which used to open into an inner courtyard has recently been replaced by a European style of building opening onto the street. This has further necessitated the opening of wide streets in the newly built up areas to accommodate increased motor traffic in the areas, but also to provide these newly designed houses with enough sun light and air. However, the houses have retained their traditional flat roofs which are still used as bedrooms in the hot season and as places for drying household washing.

The compact shape of the Middle Eastern town was the result of constant insecurity and the environmental challenge to man in this area; these factors no longer exist and consequently, the modern town has become almost shapeless. Bedouins, who were a constant threat to town dwellers in the past, are now under the control of the various governments while a higher standard of living brought about by the introduction of air conditioning, refrigerators, electrification, water and sewage systems, motor transport and telecommunication,have led to the expansion of towns beyond their original boundaries especially along the main paved roads which connect one town with the next. Jeddah and Riyadh in Saudi Arabia are good examples of such a phenomenon.[44]

Cement and concrete have replaced the old fragile materials used for construction purposes (see Chapter 3) and the use of such materials

has enabled the town to expand vertically, particularly at the town centre where land values are high. Thus the skyline of the Middle Eastern town is no longer dominated by the high minarets and the large domes of mosques as it used to be, but by multistorey buildings which overshadow these old features of the town. With these characteristics, the modern Middle Eastern town looks, from a distance, almost like a western city.[45]

It has become almost impossible to classify the use of land in the towns since the traditional rigid distinctions between commercial, industrial and residential areas (see Chapter 3) have given way to an unclear pattern of spatial arrangement where even land use legislation is often ignored and shops, workshops and larger industries may be found wherever spaces are available. The industrial areas have been penetrated by slums and run-down residences while the commercial zones, as in Kuwait, Riyadh or Beirut, are half commercial and half residential with business offices located on the main floor and the other six or eight occupied by middle class tenants.[46]

However, changes in the Middle Eastern city vary from one city to another according to the economic status of the country in which the city is located. For example, cities located in a major oil producing country have experienced more extensive change than the cities in the non-oil countries. "The exploitation of oil in Kuwait has given rise to an extraordinary metropolis which it is hard to believe could ever have grown so rapidly under normal factors of growth."[47] From a mud Gulf city, twenty five years ago, Kuwait has extended over miles of scorching desert sand. Its buildings are nearly all air conditioned, its building boom unprecedented. Beirut is also a fast developing city in a non-oil country but it is still labouring under its age-old street pattern,[48] while Sana, the capital of Yemen Arab Republic, (non-oil

country) is still, in both form and character, a typical Arabian-City of the pre-oil era.

The variation in changes from one city to another can also be noted within the country. For example, the changes in the physical structure of Riyadh can in no way be compared with that of Hofuf, Buraidah or even Medina in Saudi Arabia. It seems that the degree of change usually reflects the economic plight of a particular country which determines whether it is possible or impossible to carry out development projects in a certain city.

4.2 The Early effects of Oil on Settlements in the Eastern part of Saudi Arabia

At the time of the establishment of the Kingdom of Saudi Arabia (1932), the eastern part of the country, which later became known as the Eastern Province, was a quite retarded area with a limited economy and a small population. The economy was based mainly on date farming in the two principal Oases of Al-Hasa and Al-Qatif, or on the traditional fishing and pearling in the waters of the Arabian Gulf. Due to adverse local conditions, mainly man-induced, and to a downward trend of the world date market, dates declined in price (see Chapter 11 and 12). The price of one Al-Hasa Qullah (130-140 lbs) of Ruzaiz dates went from approximately 48 Saudi Riyals in 1948 to 10 Saudi Riyals in 1951.[49] Pearls also declined in price after 1931, due partly to the worldwide depression in the thirties and partly to the appearance of Japanese cultured pearls on world markets. Due to the aridity of the region, a pastoral economy was very limited and unreliable.

In 1934 the Province had only one principal city, Hofuf. Dammam was then a small fishing village on the south side of Tarut Bay, while Al-Khobar city did not exist. There was no indication that any change would take place in this region in the near future; but oil was discovered in the region, and this resulted in a spectacular change in the

whole Eastern Province, and brought enormous wealth to the region.

The story of oil in the Eastern Province started when the Standard Oil Company of California (SOCAL) succeeded in proving oil at Bahrain in 1932. That find aroused an interest in the mainland of Arabia, almost 40 km. away, as an oil-bearing province.

On May 29th 1933, a concession agreement was signed between SOCAL and the Saudi Arabian government for a period of 65 years.[50] On September 23rd, two American geologists landed in a launch at Jubail on the east coast of the country to begin the petroleum exploration of an area which is now proved to have the world's largest known oil reserves.

The geologists started to explore the coastal plain south of Jubail. On September 28th 1933, they found a domal geological structure in a hilly area, a feature which indicated the possible presence of oil. They called the structure the Dammam Dome.[51] Owing to the structural similarity of the Dammam Dome to the one already yielding oil on Bahrain Island, the geologists established their first field camp near Jabal Dhahran. This early exploration took place in areas somewhat removed from the settled communities in the Eastern Province. Consequently it was necessary for the company to build camps to accommodate its workers. In these early days, and particularly when production started, the small village of Dammam and the few fishermen's huts at Al-Khobar afforded neither living quarters nor supplies of food and other necessities for the oil men. Almost all supplies were imported from abroad.

To handle incoming materials and supplies, the oil company began by building a pier in 1935 at Al-Khobar, 10 km. east of Dhahran Camp[52] (Plate 4.1.). This project afforded the first of the company's construction jobs for local people. The establishment of a customs post, and the construction of an all-weather road to drilling site number one at Dammam, north of the present Dhahran residential area, stimulated the

Plate 4.1 The building of Al-Khobar pier in 1934-35 afforded the first construction jobs provided for local people by Aramco Oil Company

(Photograph published by Aramco,1968)

beginning of small permanent settlements where none had existed previously.

The first camp at Dhahran was under canvas, but the development of a permanent settlement also commenced. The camp was more elaborate than the usual 'wildcat' camp, in keeping with the size of the project and the supposed assurance of finding oil. Although built as far as possible with local materials, the quarters were roomy and comfortable. With modification and enlargement, some of them remained in use as Dhahran District Office until late 1957. The construction of the present Dhahran residential area was started in 1936[53] (Plate 4.2.).

In 1938, oil was discovered in commercial quantities, and the Dammam Dome was proved to be an important oilfield. Dhahran Camp was turned into a community. The residential area, begun in 1936, was expanded. Family cottages, dormitories and apartments for men without families sprang up and a dining hall, club house and swimming pool were added. A hospital and clinic were temporarily installed in three family cottages. With the addition of a commissary, storehouse, garage, laundry, repair shops, utility plants and a central air-conditioning plant, Dhahran became a self-contained community.[54] Traders were attracted, and they opened small shops to provide services for the newly established communities in both Dhahran and Al-Khobar. This small beginning stimulated commercial activity in Al-Khobar, which later was to become the largest retail commercial centre in the Eastern Province.

Associated developments quickly followed. The construction of a pipeline from Dammam to Ras Tanura, the oil exporting port, in 1939, led to the establishment of another settlement at the latter place. In 1944, the Abqaiq field was proved and development similar to that at Dammam followed.

As the construction of oil facilities increased after the Second World War, the port of Al-Khobar, with its shallow water, proved to be

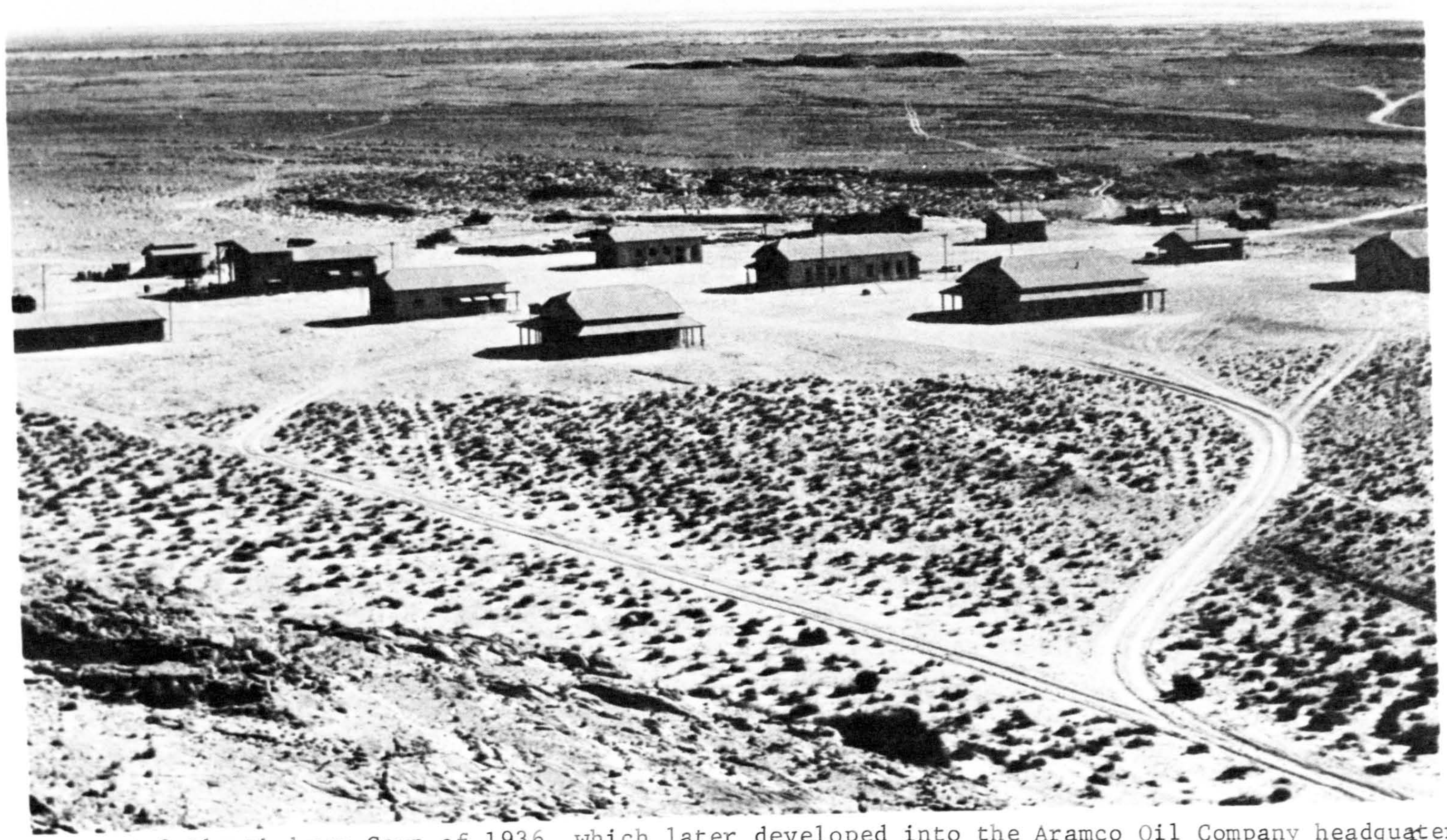

Plate 4.2 The Dhahran Camp of 1936, which later developed into the Aramco Oil Company headquarters and one of the flourishing cities in the Eastern Province of Saudi Arabia (Photograph published by Aramco, 1968)

inadequate to handle the heavy materials brought in. Then a new location just east of the fishing village of Dammam was chosen for the construction of a new port capable of handling all the materials. A port extending 11 km. out into Tarut Bay was built in 1950-51. It was connected to Riyadh by a railway, 550 km. long, which also linked Abqaiq camp and Hofuf. The new port also stimulated the rapid growth of Dammam, which changed from a small fishing village into a large town. In 1953, the government's administrative offices were moved from Hofuf, the former provincial capital, to the newly-developed town of Dammam, which then became the capital and the most important city in the Eastern Province. Hofuf remained a traditional city, in contrast to the modern complexes that were developing as a result of oil finds.

In response to the large demand for oil immediately after the Second World War, oil production was increased from less than 20,000 barrels daily prior to 1944, to an average of 246,000 barrels in 1947. By the beginning of 1949, the daily average had passed 500,000 barrels, and by the end of1950, it had passed 600,000 barrels (see Table 11.1). These increases in production, however, necessitated a quick and cheaper way of transporting the huge quantities of oil from the oilfields in the Eastern Province to the markets of Europe and America. A pipeline shortcut across northern Saudi Arabia and its neighbouring Arab States to a Mediterranean port had long been considered as a cheaper means of transportation than the long journey by tanker round the Arabian Peninsular and through the Suez Canal.[55] The decision to construct the Trans-Arabia Pipeline (Tapline) was taken, according to Aramco, in 1945, but it was only completed in 1950.

The construction of the Tapline was accompanied by the appearance of a considerable number of new settlements. An investigation into the origin of the settlements stretching along the Tapline revealed that

Turaif, Ar'ar (Badana), Al-Qaisuma and an-Nuayria towns did not exist before 1950. According to Reed,[56] they were originally built as pumping stations along the Tapline, which stretches for 1,712 km. from the oilfield areas in the Eastern Province to the Mediterranean port of Sidon in Lebanon.

The construction activities between 1945 and 1950 attracted the Bedouins who were roaming the desert. They came not only to work on construction projects, but also to fetch water from the pumping stations for themselves and their animals. The Tapline crosses arid and empty country with a very limited indigenous population. However, one stipulation in the contract agreement, according to Cressey,[57] provided that the Tapline Company "should supply water to any passing Bedouin and his camels". Consequently, the company dug deep wells at each of its pumping stations to provide water for its employees and the passing Bedouins in accordance with the contract agreement. Word, however, travels rapidly in the desert, and in the course of a year one station was called on to supply water to 12,000 Bedouins, 20,000 camels and 40,000 sheep. Some Bedouin tribes came from Syria and Iraq, as far as 800 km. away. During July 1950, Tapline supplied water to 150,000 camels and twice as many sheep and goats in six localities where 100,000 or more Bedouins established summer camps along the pipeline route.[58]

Each Tapline station employs 100 to 300 Arabs (local and others) and some two dozen Americans or Europeans.[59] According to Aramco records, this project involved more than 16,000 men and over 3,000 pieces of motor and construction equipment. Because these areas were originally uninhabited, the company was obliged to build complete new communities at these stations, with everything necessary for self-sufficiency, such as houses, hospitals, schools, communications, repair shops, airstrips,

and feeding and recreation facilities.[60] Consequently, around each station a new town has developed with a suq (market place) to supply the district; thus Ar'ar (Badana) grew from nothing in 1950 to 3,000 inhabitants five years later.[61]

This early start, however, was followed by a government decision to open new offices to administer the newly-developed region and to provide accommodation for its officials. Thereupon, the four pumping stations were connected by a gravel road, which was paved by 1963, according to Abdo, and became the main road for the transport of commodities by lorry from Lebanon, Syria and Jordan to eastern Saudi Arabia.[62]

All this stimulated the development of these centres from mere pumping stations in 1950 to considerable towns in 1967, some with as many as 20,000 inhabitants.[63] One of them,Ar'ar, has been developed sufficiently to become the capital of the northern region, taking this position from Al-Juwf, which had a long history, but is now more than 150 km. from the Tapline.

Generally speaking, the development of the new oil towns took on a special pattern. The first stage started with the early oil explorations at a distance from existing communities; temporary camps (field camps) were established under canvas to accommodate the early explorers and their men, for example, at Dhahran, Abqaiq, Ras Tanura and many other places. As the prospect of discovering oil became brighter, these field camps began to be transformed, and huts made of wood and metal sheets were built on a more permanent base; this was the second stage. As oil activities intensified, and the need for oil crews to stay for longer periods became more urgent, the hut encampments became insufficient and inconvenient, and the huts were made into more permanent buildings to accommodate the crews and other workers without families. Some of these buildings are, in fact, still in use at present, housing unmarried em-

ployees in what is known as the Intermediate Camp, similar to that at Dhahran, in front of the Aramco headquarters.

These developments were followed by a population movement from the surrounding areas to work directly or indirectly for the oil fields, so that the newcomers occupied any available land around the oil camps, and erected their tents and cottages haphazardly (Plate 4.3.). These developments led to the creation of shanty towns. In order to create a healthier environment in which oil activities could be maintained, and indeed to persuade the American employees to stay for longer periods, Aramco planned and built a new town next to each camp with all the necessities for permanent settlement. Thus Dhahran, Ras Tanura and Abqaiq are all new towns built on the American pattern, containing thousands of bungalows equipped with electricity and other facilities. The bungalows are all air-cooled in summer, and can be heated with the same equipment in winter. Every house has its own garden, and the company maintains groups of gardeners to look after them. The streets in these oil towns have paved sidewalks; there are motion-picture theatres and club-houses for social gatherings and relaxation. The clubs have libraries and terraces for dances; there are swimming pools, tennis courts, playing fields and recreation grounds. Aramco spared no effort to make its American employees as happy and as comfortable as possible.

The increase in oil production was accompanied by a large population movement from different parts of the country to the oil towns to work directly for the oil company, known since 1944 as the ARABIAN AMERICAN OIL COMPANY (ARAMCO), or indirectly in other services. The number of employees in the oil industry rose from less than 2,900 at the end of 1943, to 18,637 five years later. In addition, 1,617 Americans and about 5,200 Saudi Arabians were engaged in ancillary work by the end of 1948.[64]

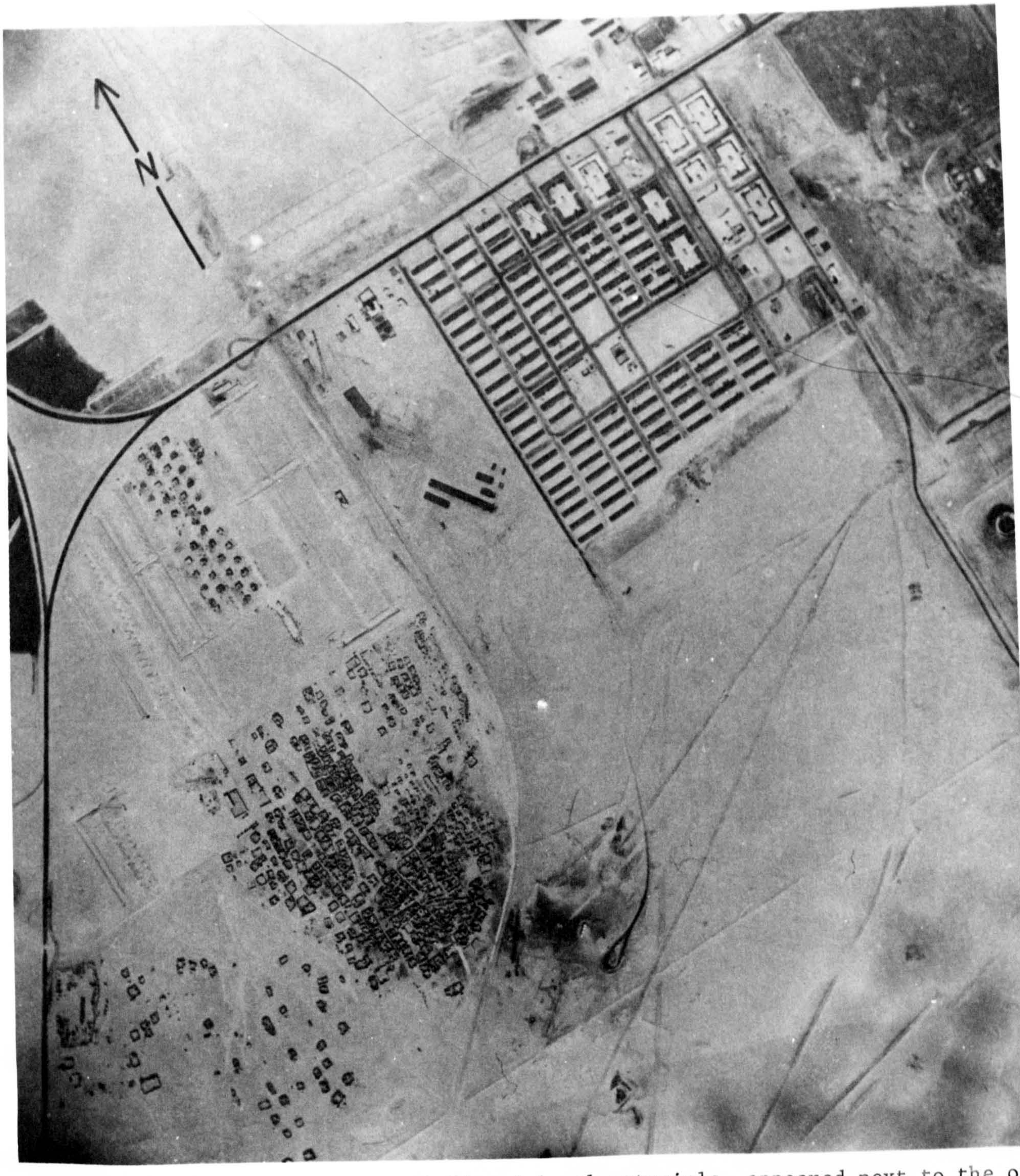

Plate 4.3 A shanty town, built of local materials, appeared next to the oil camps in the earlier years of the oil activities, as was the case in Abqaiq in 1958

As a result, the newcomers occupied any available land in the oil towns, and built traditional quarters with local materials. In Dammam they built either in or adjacent to the old fishing village agglomeration, which then had a population of about 3,000, while shacks sprang up on the beach at Al-Khobar. This created not only an unhealthy gathering of dwellings in the oil towns, but also problems in land ownership. To overcome these difficulties, and to establish modern, permanent communities, the Saudi government, in co-operation with the oil company, drew up plans in 1947 to develop these communities and to establish permanent urban structures, in which ownership could be controlled. In Dammam, the plan provided for new streets and blocks around the core of the old village. In 1950, the sub-divided land had been granted, or sold off, and there was a great demand for land. By 1952, the village,which had occupied less than 170 acres five years previously, extended over an area of 525 acres, not including the 400 more acres which had been sub-divided, and which were in private ownership. The population had increased to about 25,000.[65]

Since the original plan of Dammam did not satisfy the large demand for housing, another plan was drawn up in 1952 to cope with the rapid growth of the town. This plan was essentially an extension of the first one and covered 1,000 acres, which were sub-divided and sold off by the municipal authorities. A sewerage system was partially installed, while a water distribution network was completed at the same time. Streets were graded and filled. In 1953, a comprehensive plan covering 25.9 sq. km. was also drawn up, but lack of statutory enforcement powers rendered it ineffective.

Similar plans, though on a smaller scale, were drawn up for Al-Khobar, as the oil industry brought more people to the town and the demand for housing grew. As a result, a comprehensive plan for the whole

town was prepared. This plan did, in fact, help to control the town's growth in a healthier manner. With the increased oil activities, a larger number of employees began to bring their families into the Eastern Province. To avoid the creation of shanty towns on the oil-fields, and, in fact, to tie the workers more and more to the company, Aramco introduced in 1951 a 'Home Ownership Programme' for its employees. It was prepared to carry out this programme in natural communities, rather than to build, operate and maintain living quarters separate from the general population. With the co-operation of the government, the Company began to encourage its employees to build or purchase homes in the existing communities. The 'Home Ownership' plan gives every employee who has served ten years in the company the right to have an interest-free loan from the company to build or to buy his own house. The company forgoes 20% of the total amount of the loan and the employee pays the balance through monthly deductions from his salary.[66]

In consequence of this programme, company developments were begun in Dammam and later in Al-Khobar on land provided by the government for free distribution to employees. Since Ras Tanura and Abqaiq were far from the existing settlements, the company built new towns next to each of these camps. Rahima was started near Ras Tanura in 1952, and Madinet Abqaiq was built next to Abqaiq camp in 1956, though development of the latter was much slower. In 1960, the population of these two new towns was about 4,000 and 1,500 respectively.

The Home Ownership Programme also had an effect on Tarut Bay communities. Overall, though, it accelerated the construction of houses and established a major local building industry. By the end of 1973, the total number of houses which had been built for the oil company employees in the whole of the Eastern Province was 8,600.[67]

The oil company was not only concerned in providing accommodation

for its own employees, but it also became more closely involved in regional development. In 1955 requests were received to develop other local communities. The first was for the establishment of an agricultural village, halfway between Dammam and Al-Khobar, and plans were prepared to house a community of about 3,500.[68] This site was named Rakah, and Bedouin groups were settled there. Further requests were received for the development of the old port of Jubail and for Hafr Al-Batin and Qarya Al-Ala, the latter two settlements being near the northern frontier of Saudi Arabia. This was perhaps the first tangible evidence of the oil wealth being used for development in places other than the oilfields themselves.

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PART TWO

PHYSICAL ENVIRONMENT OF THE STUDY AREA

CHAPTER 5

GEOLOGY AND GEOMORPHOLOGY

Introduction

The geological and geomorphological study of Al-Hasa Oasis is important for the better understanding of the human settlement of this area. Soil and water resources which are the products of the geological structure of this area are no doubt the reason for the presence of the Oasis in this hard desert environment. The landscape, which will be dealt with later in this chapter has also determined whether the surface of the land is suitable for cultivation and human occupation or not. Similarly, the building materials which were used in the many settlements of the Oasis are indeed the product of these physical factors. For this reason a broader look at the geological structure of the area may be useful in this study.

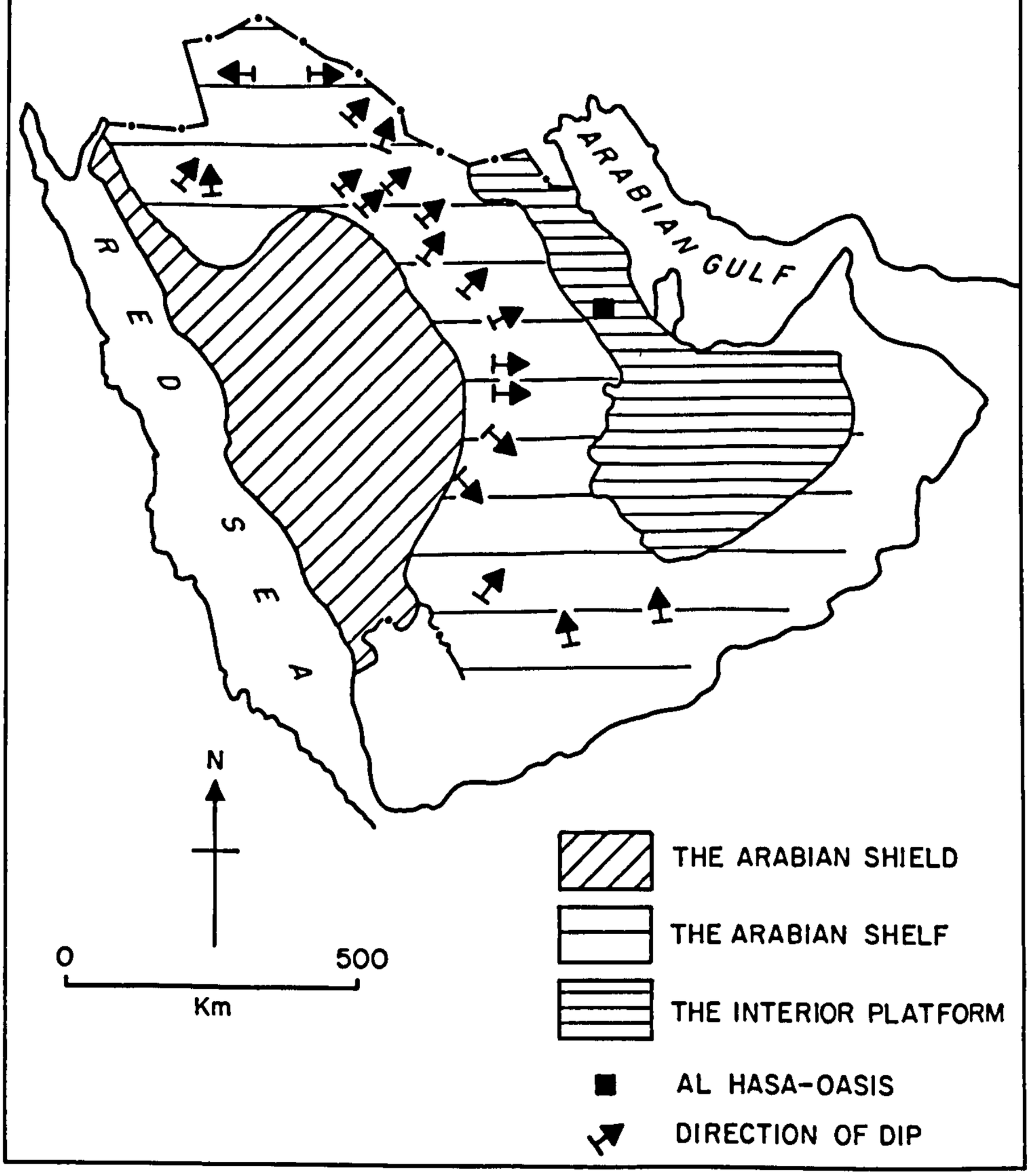
5.1 Geology

The geology of Saudi Arabia from the structural point of view falls into three major parts (Fig 5.1). These are the Arabian Shield, the Arabian Shelf and the Interior Platform. The Arabian Shield, the old stable land mass, occupies the western part of the country and consists of Igneous and Metamorphic rocks. Immediately to the east is the Arabian Shelf, which occupies most of the northern part of the country, as well as stretching in a sigmoidal shape round the Arabian Shield, and is composed of sedimentary rocks. Limestone is the predominant rock type, but sandstone and shales also occur.

The Interior Platform occupies the eastern part of Saudi Arabia and represents deposits from an extended Arabian Gulf. It is in this structure that Al-Hasa Oasis is located and it is this structure which will be considered in general in this chapter.

In the early geological epochs, this area was occupied by the sea of the Arabian Gulf which extended to cover some parts of central and

Fig.5.1 GEOLOGICAL PROVINCES OF SAUDI ARABIA



Source: Powers (1966)

western Saudi Arabia. The northern parts of Saudi Arabia, Jordan, Syria, Lebanon and Iraq were also covered by this sea[1] in which limestone, mud and sand were deposited. The thickness of these deposits estimated at 30,000 feet at the Arabian Gulf shore, decreases towards the interior of Arabia in the west.

The sedimentary rocks of this geological structure are more recent than the Arabian Shield which forms the basement complex upon which this structure lies.[2] Roughly, the borders of the whole sedimentary Province which, of course, includes the so-called Arabian Shelf, swing round the eastern edge of the Arabian Shield and roughly follow the configuration of the great sand of an-Nufud. The sedimentary strata slope gently away to the northeast of northern Saudi Arabia to the Arabian Gulf shore in the east and to the southeast into the Rub al-Khali (the Empty Quarter). The strata which appear on the surface in central Arabia are found thousands of feet below the surface near Dhahran in the eastern part of the country. Similarly, the limestone existing on the surface near Dhahran at the Arabian Gulf shore outcrops at much higher elevation in central Arabia.[3]

The sediment of Al-Hasa Oasis is classified as follows:

Quaternary: Gravels and sand-dunes

Miocene/Pliocene: Conglomerates, sandstones, sandy limestone, marls and shales

Eocene: Marine, limestone, charts and shales.[4]

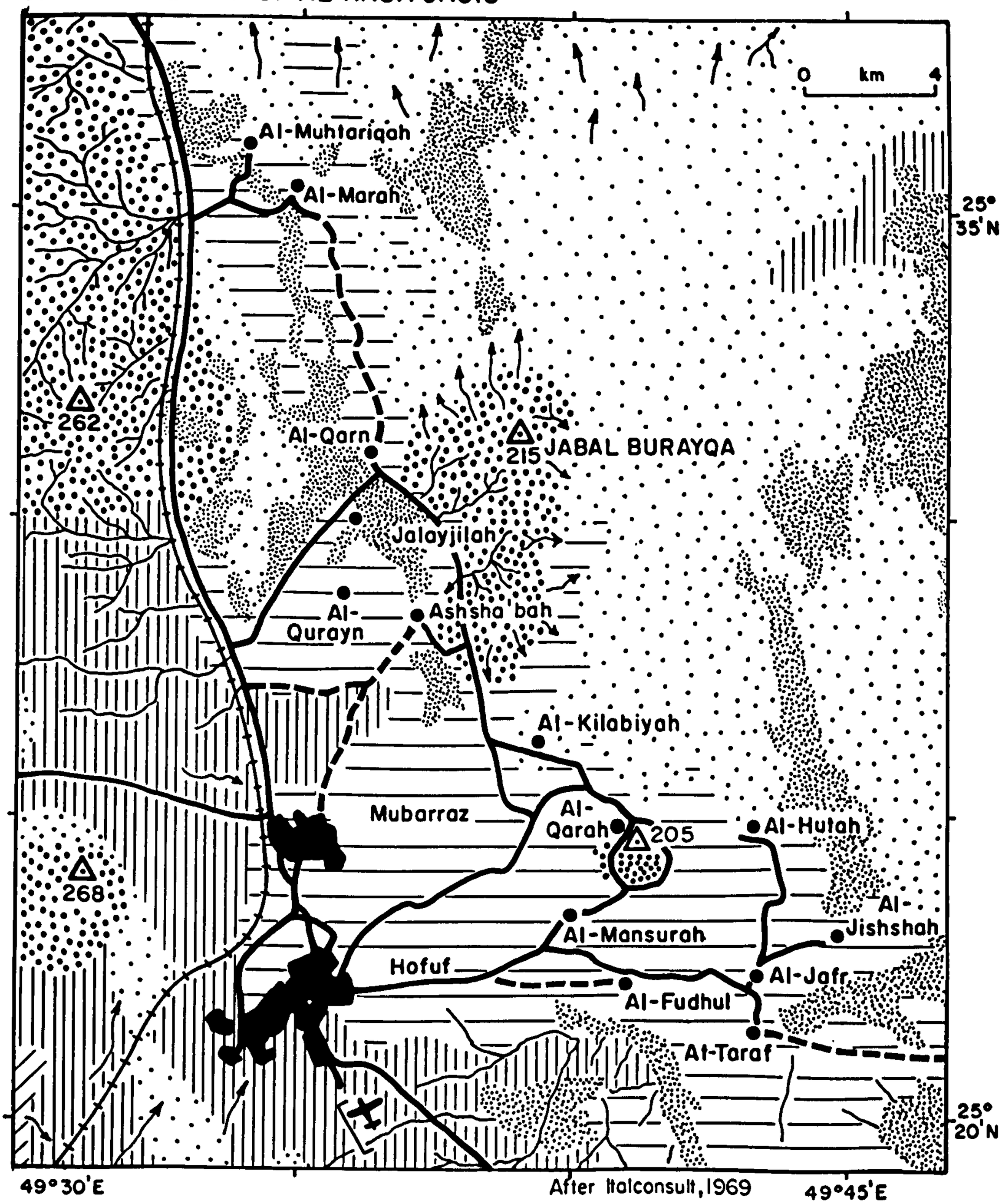
The geology of the Oasis is shown in Figure 5.2.

The geology of the area has, no doubt, affected the human occupation and settlement of the Oasis in various ways.

(1) Until fifteen or twenty years ago man in the Oasis depended mainly for his livelihood on cultivating the soil, which is the product of the geological structure of the area.

Fig.5.2

GEOLOGICAL MAP OF AL-HASA OASIS



(2) The water used for both cultivation and human consumption in the Oasis is only available in the geological structure of the area. It has been in these geological structures from more humid climatic periods or reached the Oasis through the sedimentary structures which slope gently towards the area. Saudi Arabia has no surface water and the rain in the Oasis is extremely low, as will be seen later in Chapter 6.

These facts,undoubtedly, explain the close relationship between the geology of the area and human settlement. Without the favourable geological structure of the area the whole existence of the Oasis would be in doubt.

(3) Most of the beds near the surface of the Oasis are calcareous and partially soluble, and so do not provide good quality stones for building, though occasionally they have been used. Sun-dried bricks made of clay arethe most commonly used material in the buildings of Al-Hasa Oasis. Consequently, the low built house is a common feature in all the settlements of the area, particularly the villages.

(4) The availability of clay in the area has for a very long time provided the raw materials for pottery manufacturing in various parts of the Oasis, such as the factory which still exists in al-Qarah village.[5]

(5) Finally, although the orientation of the sedimentary strata are constant, they are disturbed by some faults and foldings resulting from a great deep-seated pressure exerted from eastern Iran and by resistance to this pressure created by the old land mass of the Arabian Shield. It is in these folds that most of the known oil in eastern Saudi Arabia has accumulated, whose exploitation has led to the creation of some new urban settlements. Oil revenues have, in fact, affected the whole of life in Saudi Arabia and its impact will be investigated later in this study.

5.2 Geomorphology

Al-Hasa Oasis is located according to Abul Ela[7] on a Terrace Plain which persisted during the Neogene as a regional structural terrace on the Arabian Foreland. The Neogene Sea encroached upon this terrace from time to time as far as the eastern edge of the Summam Plateau, leaving marine deposits. The gravels that cover this terrace are derived from the Neogene marine incursions and consist of conglomeratic materials, which have been weathered by sub-aerial erosion.

The eastern border of the Terrace Plain is the Jafura Desert, while the Summan Scarp forms the western edge. The surface of this plain is relatively flat, and there are scattered low mesas, originally remnants of the former extension of Summan Plateau,[8] which occur in the Oasis area. The width of the plain in the north (north of the Al-Uyun village group) is only 8 km. though it reaches 25 km. at Hofuf and becomes wider as it proceeds southwards. Al-Hasa Oasis is of variable height, the Eastern Oasis lies in a 9 to 18 m. deep depression which continues south and southeast of Hofuf for some 40 km. The surface of the Oasis slopes gently from west to east except in a small area in the north near Al-Uyun, where there is a slight westerly slope.

The shape and arrangements of the landform in the Oasis area have been influenced by the presence of the Neogene formation known as Hofuf Formation, which is probably of the Pliocene Age. First the beds of limestone are all horizontal, and because of differences in resistance to weathering, some beds stand out as bold cliffs. As a result, narrow structural benches are common, particularly along the edge of the Oasis in the north-west. Second, most of the beds are calcareous and at least partially soluble. This has facilitated weathering and has led to the formation of caves and calcic horizons in the soil, which in places form duricrusts on the surface. The soils are also highly calcareous. Third,

the formation is dissected by sets of huge vertical joints which cut the rocks into immense blocks. These joints have become the prime cause of the formation of caves. Fourth, the duricrust, developed on the Hofuf Formation, has preserved many of the landforms that otherwise would have been eroded away.[9]

The huge caves which characterise the low escarpments are some of the most striking geomorphic features in Al-Hasa Oasis. They are especially well developed at Jabal Qarah, about 10 km. north-east of Hofuf. The caves are vertical openings, 15 m. or more high and 3 m. or more wide, which penetrate into the rock, in some cases as much as 100 m. According to Chapman, they were formed by intense chemical and mechanical weathering along vertical joints in a former, more humid climate. Even in the present arid climate, disintegration is making considerable progress in the caves. The walls are coated with rock meal, and on many surfaces thin rock scales are peeling away. The products of this process accumulate at the bottom of the caves, where they form the flat floors. The current weathering can be ascribed to:

(1) solution of cement in the calcareous rock with consequent crumbling; and,

(2) the pressure effects of salts deposited near the rock surfaces.

In some places a gravity slope has developed on fine-grained detritus at the base. Here, the softer limestone beds in the escarpments succeed in maintaining a bold front. Eventually, blocks of the more resistant rock break loose along joints and begin sliding down the gravity slope.[10]

5.3 The Landscape

The landscape of Al-Hasa Oasis outside the date-gardens is dominated by a mantle of sand-dunes which frequently, according to Saxen[11] threaten the settlements and the date-gardens of the Oasis. The height

of the sand-dunes reaches, in some places, over 35 m. They are interrupted by sabkhas (saline swamps) and low mesas, which also interrupt the continuity of the date-gardens of the Oasis. The sabkhas occur as a series of basins extending from the north of Hofuf northwards to beyond Al-Uyun (Fig 5.3). They not only act as drainage channels for the Oasis, but also serve as catchment basins for any winter rainfall which might occur. The most extensive sabkha is Birkat Al-Asfar to the north-east of Jabal Qarah. It extends for some 10 km. to the east and south-east. There is also a large sabkha located near at-Taraf village, almost 11 km. to the east of Hofuf, and extending towards the south, to the vicinity of Jabal Dukhainah.

In general, the area in the Oasis is flat and simple, but in detail the simplicity of the area is, indeed, disturbed by the existence of several wadis and hills which divide the Oasis area, according to Wakuti,[12] into five regions. These regions are recognised as follows:

(1) The north-western region consists of several low hills, and depressions to which these hills drain their surplus irrigation or the rainfall water. The discharge of this region is in general very bad, so that in winter the water accumulated in this area endangers the cultivated lands and the human settlements. Whilst the wadi bottom west of Al-Kilabiyah lies 135 m. above sea level and the neighbouring hills rise 150 to 160 m. above sea level, the wadi bottom at Al-Uyun villages has an altitude of 110 m. above sea level, and the neighbouring hills have an altitude of 120 to 130 m. above sea level (Fig 5.4). The most extensive depression in this region is the sabkha of Es Sarrah, to which some of the neighbouring hills of the Al-Uyun district drain their surplus water. It seems that the wadi courses were cut off in some places by the travelling dunes in the area, so that a series of depressions (sabkhas) was formed in the Oasis area.

Fig.5.3

SABKHAH DISTRIBUTION IN AL-HASA OASIS

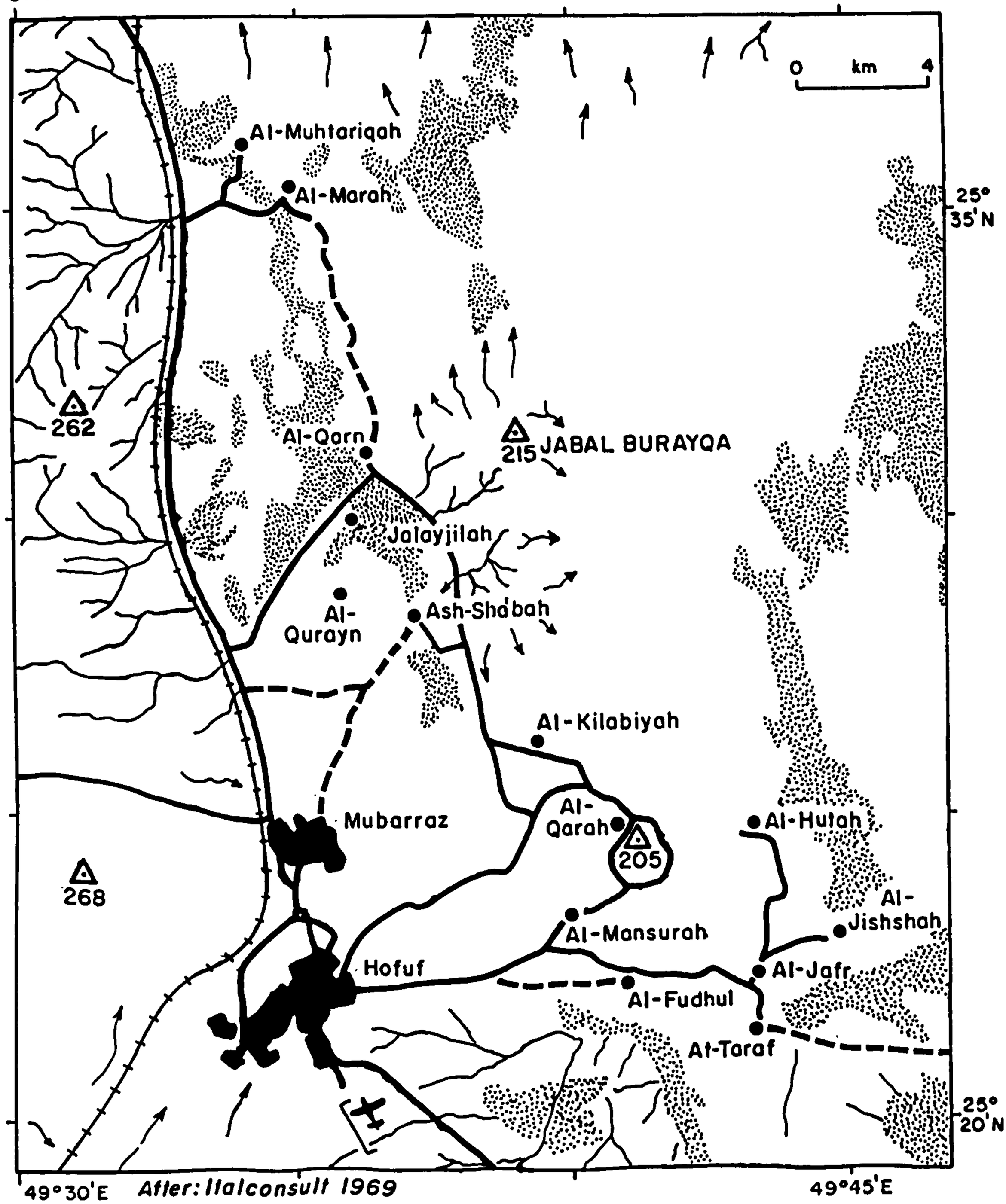


Fig.5.4

CONTOUR MAP

CONTOUR LINES

TOWN OR VILLAGE

UNSURVEYED AREA

0 Km 4

(After WAKUTI, 1969)

Al-Muhtariqah

Al-Marah

Al-Uyun

Ash-Sha'bah

Al-Kilabiyiah

Al-Hulailah

Numerous 135m tops.

Mubarraz

Hofuf

Al-Jishshah

At-Taraf

(2) The north-eastern region slopes towards the north-eastern part of the Oasis. Centuries ago, according to Wakuti,[13] the natural discharge of this area was in the north, but since the travelling sand-dunes from the north and north-west have covered a large part of the former cultivated area, the discharge area in the north has also been cut off from the bulk of cultivation in the south. However, a small strip of the old depression (sabkha) remained on the eastern borders of the former cultivated area, and in this all the surplus water of the area discharged. This depression is known locally as "Sabkhat or Birkat of Al-Asfar", and is considered as the largest sabkha in the Oasis, with an area of 3,850 hectares. Because the sand-dunes continued their movement on an 8 km. front towards the south, they caused the locking up of drainage water in the Al-Umran area of this region, so that a large part of the cultivated land has become so wet that the date-trees are dying.[14] For this reason the Sand Stabilisation Project, as described by Stevens,[15] was indeed essential for human habitation in this region.

The other features in this region are the existence of several wadis and hills of varying altitudes. For instance, the wadi south of Al-Hulailah village is situated 135 m. above sea level, whilst the hills are 140 to 150 m. above sea level. The Birkat Al-Asfar has an altitude of 120 m, and the neighbouring hills on both sides rise 135 to 140 m. above sea level.

(3) The south-eastern region, which includes the Al-Jafr and at-Taraf village areas, slopes towards the south. This region, like the previous one, is also cut off from its natural discharge by the moving sand-dunes coming from the south and south-east, so that the former cultivated area becomes boggy, especially in winter, and the date-trees die because of excessive wetness. The wadi bottom in this region lies 120 to 125 m. above sea level, whilst the elevation of the nearby hills

rises from 135 to 140 m. above sea level.

(4) The extreme eastern part of the Oasis, situated south-east of al-Jishshah village, slopes towards the east where a sabkha is formed, just in front of the sand-dunes encroaching from the east and the south, to catch the water coming from the hills near Al-Jishshah village.

(5) The final region in the landscape of this Oasis is the south-western part of the Oasis area located round Hofuf and Mubarraz towns. The typical characteristic of this area is its very irregular surface formation. This region drains towards the south-west of Hofuf, but because of the irregular surface formation the discharge is not continuous. The result is that many small depressions, catchments or sabkhas exist in this area.[16]

The general flatness of the area and the availability of water which will be discussed in Chapter 7, have acted together to provide a favourable environment for cultivation and human settlement. However, due to the general slope the surface of the Oasis from west to east, the south-east and the north-eastern parts of the Oasis were unsuitable for human settlement because of the presence of sabkhas in these parts. The effects of sabkhas and sand-dunes on the settlement pattern of the Oasis will be examined in detail in Chapter 10.

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CHAPTER 6

CLIMATIC ELEMENTS

One of the major elements affecting the climate in Al-Hasa Oasis is the maritime influence from the north and north-west. While maritime influences tend to have their greatest effects on the western parts of the Middle East, depressions, which originate over the Atlantic, can penetrate as far east as the Arabian Gulf and Iran,[1] particularly in winter. Although maritime air masses become drier in their advance across the continent, they still affect Al-Hasa Oasis and indeed the whole of eastern Saudi Arabia, in terms of 65.7 to 73.4 mm. annual rainfall (Rainfall Table 5). This influence is mainly confined to the winter months, especially between October and May.

In winter, air is drawn into eastern Saudi Arabia from different sources, from Central Asia, from the Mediterranean Sea region, as well as the Tropical Air from Rub Al-Khali Desert south of the Oasis (Fig 6.1). It is true that the Central Asian high pressure does dominate the area in winter, but since the colder air masses of Russia and Central Asia as well as the warm air from the Rub Al-Khali originate over dry lands, they bring no rain to eastern Saudi Arabia, but they affect the thermal conditions and humidity. These effects, as well as the Tropical Air, will be discussed later in this chapter. However, air masses of the Mediterranean Sea move eastward in weakening atmospheric depressions, which originally formed west of the Mediterranean Sea. As they travel towards the east, they become drier in their advance, but they still bring a scanty rainfall to the area, especially in January. The low elevation of the Al-Hasa area also tends to reduce the amount of rainfall.

While the winter season in eastern Saudi Arabia is a season of fluctuating pressure systems, the summer has a fixed pattern of high pressure to the west and a complex series of lows to the east and south-

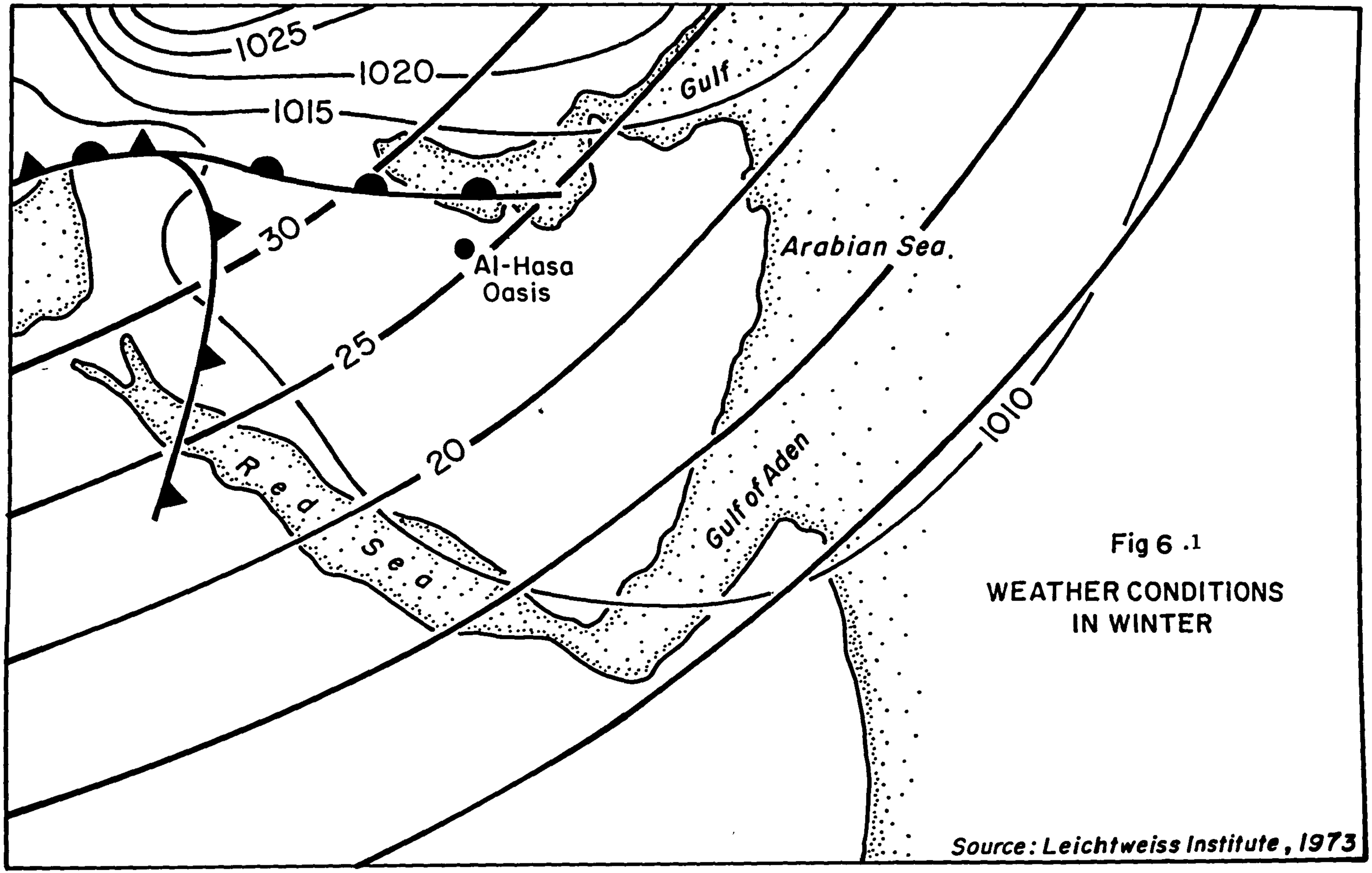


Fig 6 .1

WEATHER CONDITIONS
IN WINTER

east (Fig 6.2).

From June to September, the low pressure system centred over Pakistan extends its influence westwards to include the shores of the Arabian Gulf, and prevailing winds swing round to the north-east. These winds are known locally as "Al-Shamal"(the north). As these winds come from relatively cooler regions than Al-Hasa Oasis, they reduce the temperature during the night and tend to emphasise the diurnal variations. They are the predominant winds from July until the end of September.

The effects of these winds are sufficient to influence the inhabitants of the Oasis to build the windows of their houses towards the north and the north-west in order to receive the refreshing breeze. On the other hand, they are also a problem to the Oasis, since they help to force the encroaching sand-dunes on to the settlements and the cultivated area. In order to protect the Oasis against the encroaching sand-dunes, the Government of Saudi Arabia initiated the Sand Stabilisation Project in Al-Hasa Oasis, which has to date cost more than 14 million Saudi Riyals.[2]

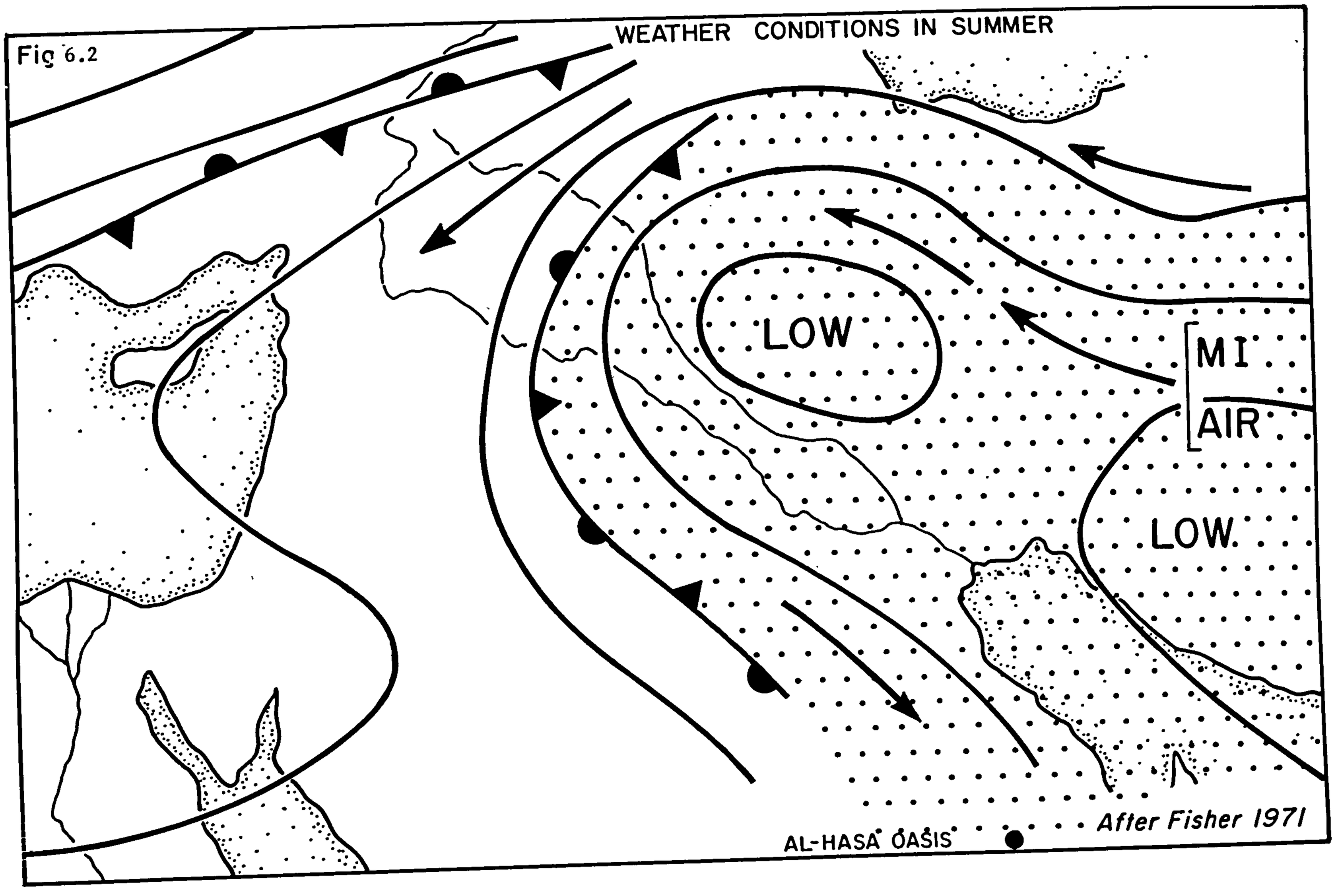
In summer the area also comes under the influence of monsoonal circulation and winds originating from the lower latitudes also occur. When these winds develop strongly, maritime air from the Indian Ocean penetrates the area and tends to cause an increase in humidity.

6.1 Temperature

Hofuf has meteorological data covering the period 1964-72, Abqaiq from 1951-72, while Dhahran has recorded data over the period 1938-72. All temperatures and other meteorological data in this chapter have been calculated for these periods unless otherwise stated.

Saudi Arabia experiences extremely hot summers everywhere except on the highlands of the west and south-west of the country. On the coasts the winter is mild. However, Al-Hasa Oasis is located on a terrace

Fig 6.2


WEATHER CONDITIONS IN SUMMER
LOW
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AL-HASA OASIS
After Fisher 1971

plain 65 km. inland and its temperature has been influenced largely by its distance from the sea. The sea's moderating influence decreases westwards and consequently the temperature range increases. The existence of only one meteorological station in the Oasis made it impossible to study the microclimate of the area. However, it seems that the vegetation and the irrigation water applied in the Oasis, tend to mitigate the high summer temperature and thus exert some influence on the microclimate of the area. Hofuf, the principal town in the Oasis, is 2.3°C cooler in July than Dhahran, which is only 4 km. from the sea. On the other hand, Abqaiq, without the benefit of the Oasis effect, is 3.4°C hotter than Hofuf. In winter, the coastal stations record the highest temperatures, with a progressive decrease inland. Thus spatial temperature variations, the result of the proximity to the sea, the existence of vegetation and irrigation water, can be illustrated by a comparison between Dhahran, Abqaiq and Hofuf. Data are given in Tables 6.1 and 6.2 Dhahran is 150 m. above sea level. Its distance from the sea and altitude may be compared with Abqaiq (38.6 km., 194 m.) and Hofuf (65.0 km., 145 m.).

Thermal conditions in Saudi Arabia are characterised by the large monthly range of temperature which, of course, is also a reflection of the large daily range. Along the coast the monthly range of temperature is modified by the cooling influence of the sea during the day and the relative warmth of the water during the night. The temperature range, again, is affected by distance from the sea, with the greatest variations being recorded inland. Table 6.3 shows the mean monthly range of temperature for the three stations.

The mean monthly range of temperature for the three stations is lower in winter than in summer. The main feature influencing the temperature range is the lower maximum temperature during the day rather

TABLE 6.1

Monthly Mean Temperatures at Selected Stations, °C

Station	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Mean	Period of observation
Hofuf	14.6	15.9	20.9	24.3	29.8	32.4	33.6	33.9	31.0	27.0	21.7	15.9	25.1	1964-72
Abqaiq	15.5	17.5	21.6	26.7	31.9	35.3	37.0	36.8	33.5	28.2	22.5	16.5	26.9	1951-72
Dhahran	16.2	17.5	21.7	25.5	30.7	34.4	35.9	35.3	32.5	28.3	23.1	17.3	26.5	1960-72

Source of Data : Hofuf - Ministry of Agriculture and Water, Riyadh, Saudi Arabia
Abqaiq - Arabian American Oil Company, Dhahran, Saudi Arabia
Dhahran - Ministry of Defence, Riyadh, Saudi Arabia

Note : All climatical data presented in this Chapter were provided by the previous sources, during unless otherwise stated

TABLE 6.2

Monthly Mean Maximum and Minimum Temperatures at Selected Stations, °C

Station	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Mean	Period of Observation
HOFUF														
Mean Max	22.0	23.8	29.5	32.7	39.2	41.9	43.0	43.1	41.1	37.1	30.2	24.0	34.0	1964-72
Mean Min	7.0	8.0	12.3	15.9	21.6	22.8	24.1	23.3	20.8	17.0	12.8	7.7	16.1	
ABQAIQ														
Mean Max	21.1	23.8	28.2	33.7	39.6	43.6	45.2	45.1	41.8	36.3	29.0	22.0	34.1	1951-72
Mean Min	9.9	11.1	14.9	19.5	24.0	27.1	29.1	28.5	25.3	20.6	16.1	11.0	19.8	
DHAHRAN														
Mean Max	21.0	22.4	26.8	30.9	36.8	41.0	42.1	41.8	39.6	35.0	28.3	22.4	32.3	1960-72
Mean Min	11.5	12.5	16.3	20.2	24.7	28.2	29.5	28.8	26.1	22.0	18.1	12.5	20.9	

TABLE 6.3

Mean Monthly and Annual Ranges of Temperature at Selected Stations, °C

Station	Distance from sea km	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual Range	Period of observation
Hofuf	65.0	15.0	15.8	17.2	16.8	17.6	19.1	18.9	19.8	20.3	20.1	17.4	16.3	17.9	1964-72
Abqaiq	38.6	11.2	12.7	13.3	14.2	15.6	16.5	16.1	16.6	16.5	15.7	12.9	11.0	14.3	1951-72
Dhahran	4	9.5	9.9	10.5	10.7	12.1	12.8	12.6	13.0	13.3	13.0	10.2	9.9	11.4	1960-72

than a particularly low night temperature. Cloud cover in winter influences the winter temperature range, for it limits the insolation during the day and acts as an insulator during the night.

January is the coldest month in Al-Hasa Oasis as can be seen at Hofuf, which has a mean of 14.6°C, while at Abqaiq it is 15.5°C, and 16.2°C at Dhahran. At Hofuf the mean minimum figure for January is 7.0°C, and the coldest temperature recorded 1.2°C (at Dhahran the lowest figure is 6.0°C) over the periods of the records.

July and August are the warmest months of the year for the Oasis. Hofuf during these months has means of 33.6°C for July and 33.9°C for August, whilst Dhahran, near the sea, has 35.9°C and 35.3°C, and Abqaiq has 37.0°C. Table 6.4 shows that summer temperature in the Oasis never reaches the extreme maximum of Abqaiq. The highest recorded figure at Hofuf of 45.7°C is still 2.2°C below the highest figure of Abqaiq.

6.2 Rainfall

The rain-bearing depressions affecting Al-Hasa Oasis and, indeed, Eastern Saudi Arabia, are generally those that have drifted eastwards from the Mediterranean Sea. From October to March these shallow and weak depressions bring light rainfall to the desert areas, though the amount deposited is extremely variable.

Table 6.5 indicates that the average annual rainfall at Hofuf is 65.7 mm., whilst at Abqaiq it is 72.8 mm. and 73.4 mm. at Dhahran. The rainfall of Saudi Arabia is mainly influenced by relief and distance from the sea, as shown in Figure 6.3. The rainfall of Al-Hasa Oasis itself has been governed largely by the simple relief of the Oasis, by its distance from the source of rain (the Mediterranean Sea), by its location in the shadow of the high Nejd Plateau and, finally, by its distance from the Arabian Gulf. These factors have combined to cause a lower rainfall on the Oasis than at either Abqaiq or Dhahran. Fortunately,

TABLE 6.4

Monthly Extreme Maximum and Minimum Temperatures at Selected Stations, °C

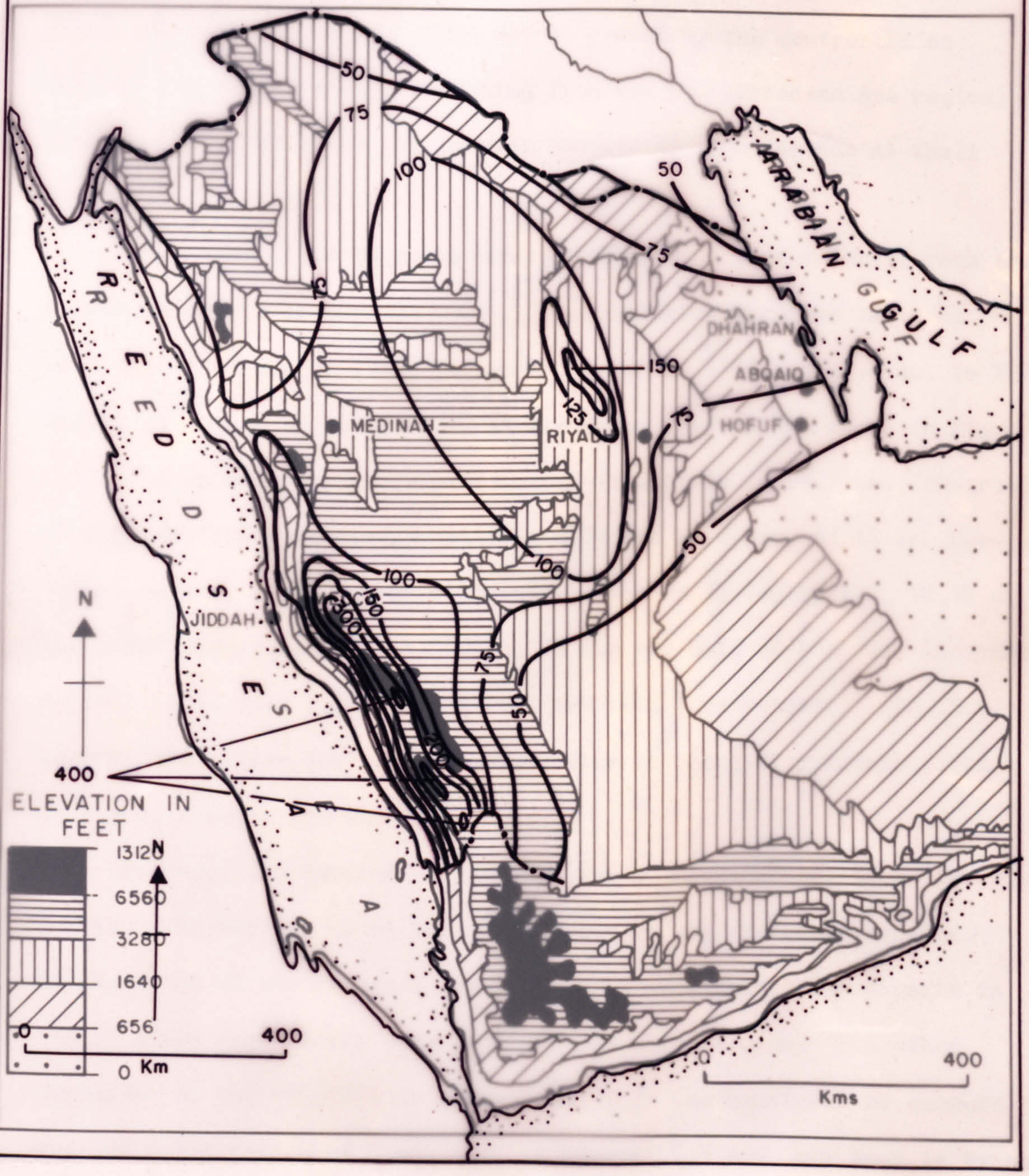
Station	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Mean	Period of observation
HOFUF														
Ext Max	27.6	32.0	36.1	38.2	43.6	45.0	45.4	45.7	44.3	40.4	35.2	30.0	38.6	1964-72
Ext Min	1.8	2.2	6.6	10.4	14.6	19.0	19.7	20.4	17.7	13.1	7.1	1.2	11.2	
ABQAIQ														
Ext Max	28.5	32.2	6.8	41.4	45.4	47.6	48.1	47.9	45.8	40.5	35.3	28.4	39.8	1951-72
Ext Min	4.8	5.4	9.5	14.0	18.8	23.6	24.7	25.3	21.3	16.9	10.2	5.1	15.0	
DHAHRAN														
Ext Max	26.0	28.5	34.5	37.3	43.4	45.4	45.5	45.8	44.1	39.4	33.9	28.2	37.7	1960-72
Ext Min	6.0	7.6	11.2	14.8	18.6	24.0	25.8	25.1	22.7	18.1	12.5	6.3	16.1	

TABLE 6.5

Mean Monthly Rainfall at Selected Stations, mm

Station	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual Mean	Period of observation
Hofuf	17.4	11.2	6.7	15.9	0.6	0	0	0.1	0	0.1	2.8	10.9	65.7	1964-72
Abqaiq	17.8	12.0	9.7	8.6	3.2	0	0	0	0	0	4.0	17.5	72.8	1951-72
Dhahran	14.6	12.7	10.2	10.2	1.9	0	0	0	0	0	9.2	14.9	73.4	1939-72

Fig.63 THE RAINFALL REGIMES OF SAUDI ARABIA (1967–71) m.m.



the inhabitants of the Oasis depend for their water requirements on the abundant natural springs which occur in the Oasis area.

The rainfall commences in autumn, with the main falls in December and January, then gradually decreases in February and March, though in April there is a maximum. This may be caused by the confrontation between the colder air mass (coming from the Mediterranean Sea region) and the warmer tropical air (coming northwards from the Rub Al-Khali Desert in the south).

The rainfall tends to be very variable from year to year, both in intensity and in frequency. Hofuf, for instance, received 140.2 mm. in 1964 and 118.9 mm. in 1969, but only 3.0 mm. in 1965 and 17.4 mm. in 1970. Annual fluctuations in rainfall at Hofuf and Dhahran are shown in Fig 6.4.

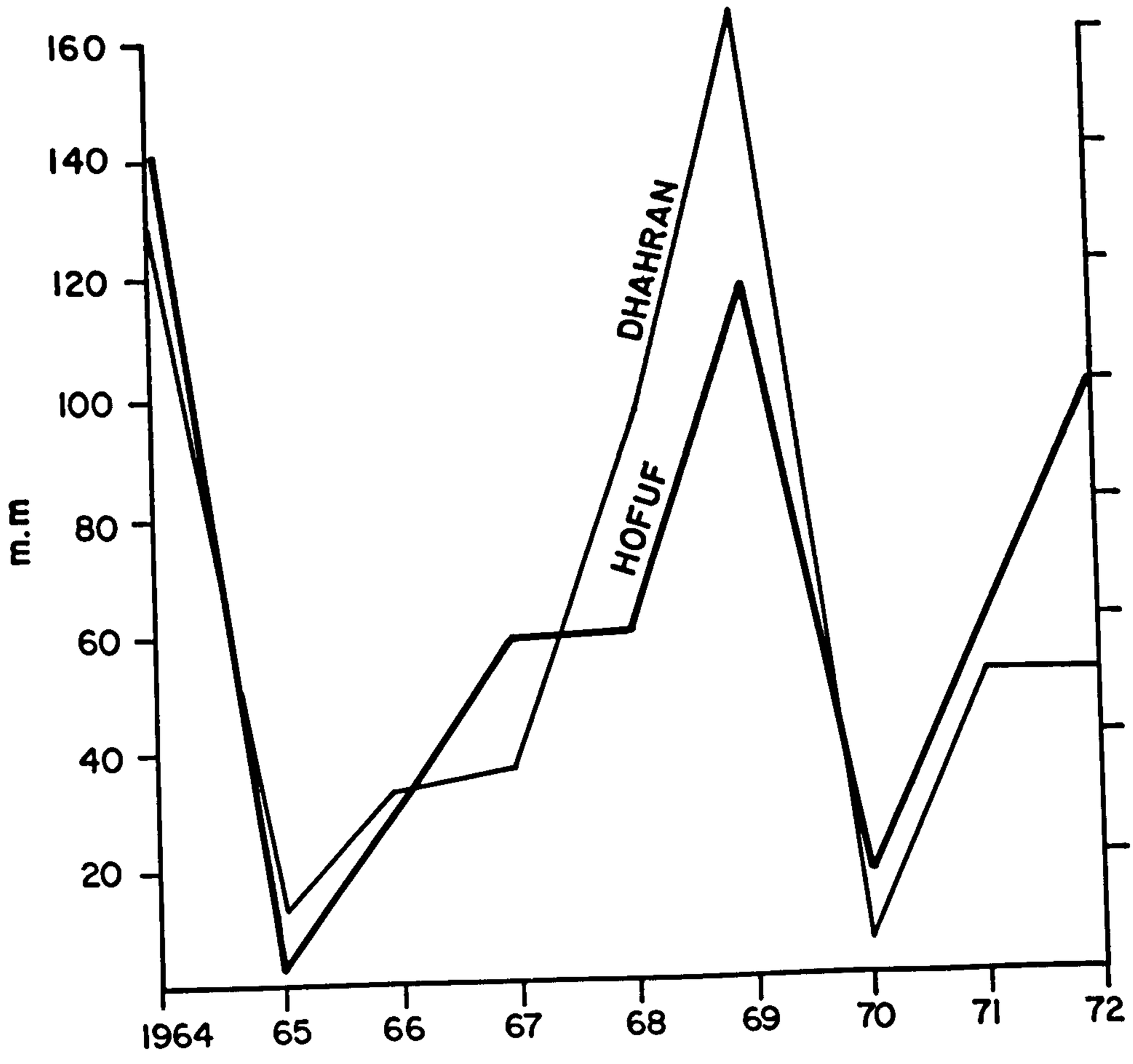
The annual average rainfall at Al-Hasa Oasis is 65.7 mm., distributed through the rainy months as follows: 4.3% for November, 43.1% for December-January, 27.3% for February-March, and 24.2% for April. 98.9% of the total annual rainfall is, thus, in the wet half of the year (November-April), while only 1.1% falls in the dry half (May-October). In this respect the region follows an extreme form of the Mediterranean pattern of summer drought and winter rain.

However, the rainfall of Al-Hasa Oasis is characterised by irregularity. The wettest month in one year may be the driest in another. The duration of the rainfall may not exceed more than a few minutes in two or three days during each month of the rainy season. The other character of the rainfall in Al-Hasa Oasis is the heaviness of showers and the quick return of clear sky. A rate of 2.5 cms. per hour is by no means unusual, so the torrential rain can cause rapid erosion of unprotected soil in the Oasis and surrounding areas.

6.3 Relative Humidity

The mean monthly values for a nine-year period (1964-1972) show

Fig. 6.4 RAINFALL FLUCTUATION IN HOFUF AND DHAHRAN



a tendency for Al-Hasa Oasis to have higher mean relative humidity in the winter months during the wet season, though it is, on average, below 60% (Fig 6.5 and Table 6.6).In summer, it is often less than 40%. The same trend applies to Abqaiq and Dhahran, though the location of these two stations, nearer the Arabian Gulf, leads to higher humidities. It should be noted here that the vegetation, lakes and swamps of the Oasis have interfered to minimise the relative humidity differences of winter and summer, otherwise the gap would be larger than observed. It is interesting to note in Al-Hasa Oasis and in the other stations that relative humidity drops quickly during the periods of strong "Somoom" winds (hot and dry southern winds blowing into the area during spring and autumn from the Rub Al-Khali Desert).

Vegetation cover and the irrigation water affects the relative humidity of the Oasis in the summer months. Figure 6.6 indicates that the minimum relative humidity of Hofuf in summer did not drop below 7.3% during the observation period, though at Abqaiq it reached 3.3% and 5.9% at Dhahran (Table 6.7).

Relative humidity of Hofuf never reaches 90%, though this figure is reached at Abqaiq and Dhahran in all months except June, when the "Somoom" winds often occur. The fact is, the extreme relative humidities of Abqaiq and Dhahran are affected during the day by the onshore winds from the Arabian Gulf, whilst Hofuf escapes these effects.

Al-Hasa Oasis is thus more pleasant in summer than Dhahran or Abqaiq, where high relative humidity with high temperature make living conditions extremely difficult. Al-Qatif Oasis (located on the shore of the Arabian Gulf) is well known for the incidence there of heat stroke and exhaustion.

6.4 Winds

The north and north-westerly winds are the most frequent winds in Al-Hasa Oasis.Table 6.8 gives the wind frequency and the directions

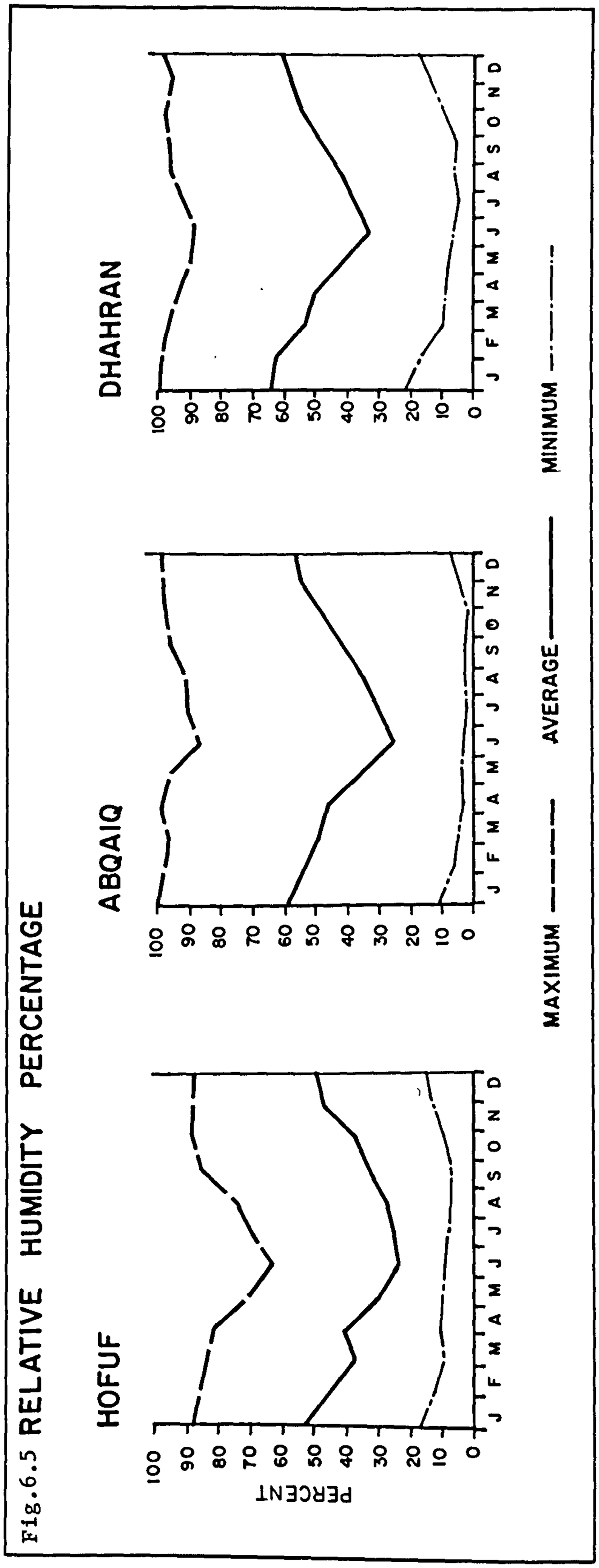


Fig.6.5 RELATIVE HUMIDITY PERCENTAGE

Source: Table 6.6. and 6.7

TABLE 6.6

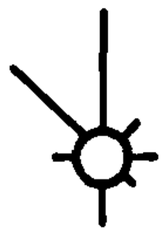
Monthly Mean Relative Humidity at Selected Stations, %

Station	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual Mean	Period of observation
Hofuf	53.5	45.8	39.6	40.0	30.0	23.6	24.3	27.6	33.5	39.3	47.6	50.4	37.9	1964-72
Abqaiq	58.7	54.2	50.3	47.1	37.0	25.5	30.7	35.8	42.9	49.1	55.7	57.2	45.4	1951-72
Dhahran	66.1	63.3	55.3	51.4	41.6	35.8	37.9	44.2	46.0	56.8	60.2	62.2	51.6	1960-72

WIND DIRECTIONS FOR AL MUBARRAZ TOWN

Fig. 6.6 APRIL 1963/ MARCH 1964

ANNUAL DIRECTIONS

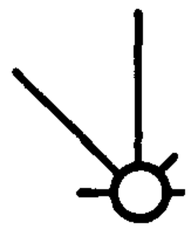


MONTHLY DIRECTIONS

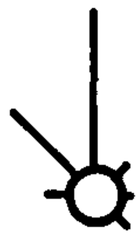
APRIL

MAY

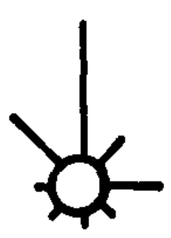
JUNE



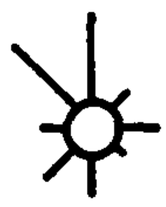
JULY



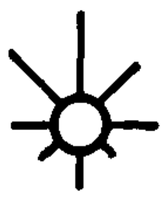
AUGUST



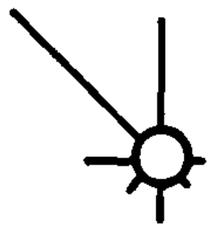
SEPTEMBER



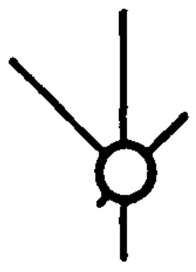
OCTOBER



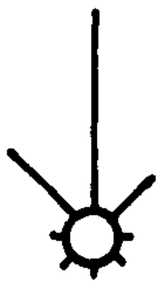
NOVEMBER



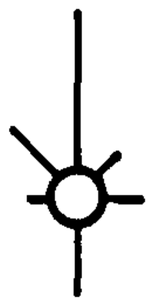
DECEMBER



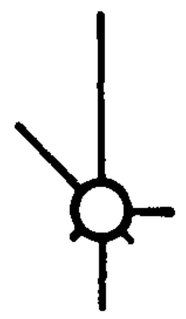
JANUARY



FEBRUARY



MARCH



Data provided by Wakuti,1964

TABLE 6.7

Extreme Maximum and Minimum Relative Humidity at Selected Stations, %

Station	Elevation in metres	Distance from sea in km	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual mean	Period of observation
HOFUF	145.0	65.0														
Ext Max			89.1	87.1	84.6	82.8	72.1	62.2	71.0	76.1	87.1	89.6	89.3	88.4	81.6	1964-72
Ext Min			17.7	13.7	10.4	11.2	9.7	9.9	7.3	7.9	8.3	10.6	12.9	16.2	11.3	
ABQAIQ	194.4	38.6														
Ext Max			98.4	97.6	96.6	98.9	96.9	86.6	90.0	92.1	96.7	98.4	99.0	98.4	95.8	1951-72
Ext Min			11.7	6.8	5.1	3.9	4.1	3.2	3.3	3.5	3.9	2.9	6.0	10.0	5.4	
DHAHRAN	150.0	4														
Ext Max			99.8	98.9	97.4	95.2	90.7	89.5	93.1	96.2	97.2	98.9	96.4	98.8	96.0	1960-72
Ext Min			24.1	17.1	11.3	10.5	9.2	6.9	5.9	7.7	7.7	10.4	16.5	18.4	12.1	

TABLE 6:8

Frequency of Winds blowing from various Directions at Mubarraz Town in Al-Hasa Oasis

April 1963 to March 1964 (Wakuti, 1968)

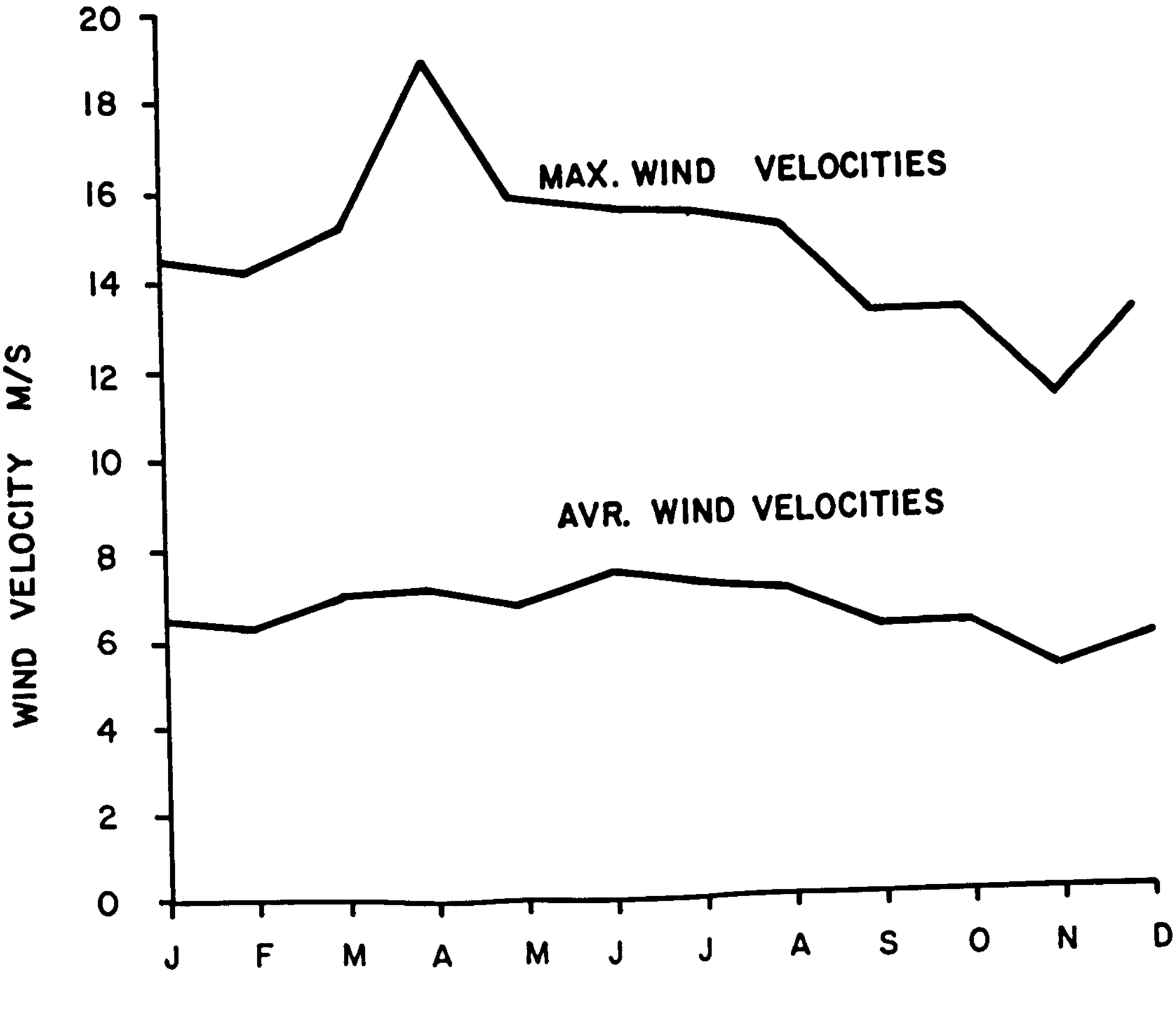
Month	N	NW	W	SW	S	SE	E	NE	VAR
January	15.5	7.0	0.5	0.5	0.5	0.5	1.0	4.5	--
February	12.0	5.0	1.5	0.5	5.0	-	2.0	2.0	--
March	12.5	6.5	--	3.0	5.5	0.5	3.0	--	--
April	4.5	5.0	--	3.0	6.5	0.5	--	1.5	9.0
May	5.5	5.5	--	1.5	5.0	2.5	0.5	0.5	9.0
June	12.0	11.5	2.5	--	--	-	0.5	1.5	2.0
July	12.5	7.0	1.5	--	--	0.5	0.5	1.0	7.0
August	10.5	5.5	1.0	0.5	1.0	0.5	3.5	2.5	6.0
September	6.5	6.5	1.5	2.5	2.5	0.5	2.5	1.5	6.0
October	6.5	5.5	3.0	1.5	2.0	0.5	4.0	4.0	4.0
November	8.5	14.0	3.5	0.5	2.5	0.5	0.5	--	--
December	10.5	10.5	0.5	4.0	4.5	-	--	1.0	--
Total	117.0	89.5	15.5	17.5	35.0	6.5	18.0	20.0	43.0
Percentage	32.3	24.7	4.3	4.8	9.7	1.8	5.0	5.5	11.9

from which they blew during the period April 1963 to March 1964. The effects of these winds on the Oasis have been discussed earlier in this Chapter.

North and north-westerly winds are the most frequent winds in Al-Hasa Oasis throughout the year. The southern winds occur mostly in spring and autumn (Fig 6.7) and have an important influence on the climate of the Oasis.

A feature of Al-Hasa Oasis is the proximity of wide expanses of sand deserts: the Dahna Desert to the west and south-west, the Jafura Desert to the east and south-east, and the Rub al-Khali Desert (the Empty Quarter) to the south. The last is the largest desert in the whole of Arabia, covering an area of 865,000 sq.km. These deserts are intensely hot and dry most of the year. In spring and autumn, southerly hot winds are drawn to the north across the Oasis on a large scale by the passage of depressions formed in the maritime air. "Autumn and spring, particularly the latter, are the chief seasons at which [southerly] hot winds occur".[3] Since they blow from an area intensely hot and dry, they transfer a great quantity of heat energy to the pressure field located over the northern part of the Arabian Gulf. Therefore, strong winds occur and frequently reach gale force, as shown on Figure 6.6 . These winds are the cause of the temperature and humidity variations previously discussed. According to Fisher,[4] "temperatures [in the affected area of the Middle East] rise - sometimes by 16-22°C in a few hours - and relative humidity falls to figures of less than 10%". The effects of these winds are so remarkable as to affect crops, nervous tension and the designs of houses. The most frequent effect, however, is driving sand and dust, which cover the settlements, roads and even penetrate the houses. Since Hofuf and Mubarraz are located in the south-west corner of the Oasis, they are the first to be affected by these winds. The effects on the villages inside the palm-tree gardens are reduced largely by the vegetation cover surround-

Fig. 6.7 HOFUF WIND VELOCITY M/S



ing these villages.

6.5 The effects of climate on settlements

Throughout history, human settlement in Al-Hasa Oasis has been affected, directly or indirectly, by the climatic conditions prevailing in the area. One of the most important connections between settlement and climate is water, which is required for domestic use and cultivation. Rainfall, at present, is an extremely unreliable source of water, but settlements in the Oasis have depended on an abundant supply of underground water which has accumulated in the geological structures of the area at a time when the climate was more humid. The presence of such water has made settlement in the Oasis viable.

High temperatures, characteristic of the desert climate, have also indirectly affected the settlement pattern of the Oasis. Heavy evaporation constantly increases the salinity of the soil in some areas thus making land unsuitable for cultivation and consequently unfavourable for human settlement.

The north and north-westerly winds which prevail in the area most of the year, have had a similar effect, particularly in the north; they caused the surrounding sand to encroach upon good arable land thus causing the decline or disappearance of many settlements which depended on this land for their existence.

In recent times modern technological methods have been applied to the problems of sand encroachment in the Oasis but despite various projects, this still presents a real threat to the northern villages and their agricultural land. Unless more successful methods of control can be devised many settlements may have to be evacuated further north to avoid this continual threat.

Many settlements on the periphery of the Oasis are attempting to expand away from the wind blown sand towards less threatened agricultural

land. Hot and dusty winds blowing from the open desert at the margins of the Oasis, considerably affect the urban areas and cause serious problems for the town planners. The air of the towns becomes polluted, dust accumulates in the streets and roads and the drainage systems become blocked.

Vacant plots and unpaved roads in the urban areas have always been a source of dust but recent developments such as the opening of new streets in the old built-up area or the widening of older ones have led to the demolition of many buildings, thus causing further dust, increased pollution and considerable inconvenience to the inhabitants of the towns.

Indeed, this is not a phenomenon unique to Al-Hasa Oasis towns but a common feature to be found in all the newly developing towns of Saudi Arabia.

Climatic conditions have been clearly reflected in the planning of towns. Temperature, sunshine, precipitation and wind directions have always been given serious consideration by the town planners and designers.[5]

As has been explained earlier in this chapter, the climate of the Al-Hasa area and that of all desert areas of the Middle East is characterised by a very wide variation between day and night temperatures. Constant clear skies during the hot season cause a great heating up of the ground during the day and the rising up of the hot air again during the night. Thus ground surfaces, walls and roofs, exposed to the direct sunshine, heat-up quickly during the day and cool down during the night.

The comfort of the inhabitants of these buildings depends largely upon the temperature of the walls and roofs, therefore the best building materials must be those that do not conduct heat. Fortunately, the local sun-dried mud brick proves most suitable. It has low natural conductivity and it is a weak material thereby necessitating the building of

thick walls.[6]

It is interesting to note that the older mud brick houses of Al-Hasa Oasis are both cooler in summer and warmer in winter than the more recently built concrete houses. Thus not only is the local material ideally suited to the climate but also readily available, cheap to produce and requires less skill in the construction process.

The roofs of all the houses in the area used Ithil or Tarfa (tamarisk) beams, palm trunks, fronds and leaves which, topped by earth, acted as insulating material against the summer heat and the cold of winter.

Unfortunately the thick mud bricks are not a perfect means of keeping the house cool, as mud stores heat, which it has soaked up during the day, and radiates part of it out into the house all through the night, thus making the interiors warmer than the exteriors at this time. In order to overcome this problem, the people of hot desert areas such as Al-Hasa Oasis have devised the flat roof, upon which they can sleep in the cool night air, while during the day they return downstairs where the roof and thick structural walls protect them from the daytime heat.

Due to the heat radiated out of the thick walls, downstair rooms of a house in both Hofuf and Mubarraz might reach their maximum temperature about an hour after sunset. This makes life unpleasantly hot so at this time of the day people usually move out of these rooms into the open air above. The flat roofs may be used as sitting rooms, dining rooms and later in the night as bedrooms. Likewise, within an hour of the sunrise the process is reversed the rooftops become too hot and the inhabitants descend to the thick walled downstairs rooms, cooled by air from the courtyard.[7] In both the design of houses and the layout of the streets there is a constant emphasis on and seeking after coolness; the twisting narrow streets, courtyards, the Malkafs (wind traps), the Mashrabiyya (carved wooden screens), the flat roofs, the orientation of

the houses and the building materials were all planned with this in mind.

Man's efforts to reduce the harmful effects of severe climatic conditions in the desert can be seen in the typical Islamic city discussed in Chapter 3 and also in the towns of Al-Hasa Oasis which will be dealt with later in Chapter 9.

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CHAPTER 7

SOIL AND WATER RESOURCES

7.1 Soil

Ever since man became a farmer, he has been dependent upon the soil for his livelihood. The distribution of early settlement was apparently influenced by soil type and site conditions. For instance, the primitive cultivation methods of Neolithic times in the British Isles meant that man was attracted to the well-drained and easily cleared and worked soils. Good drainage carried with it the disadvantages of leaching or the chemical exhaustion of these soils, so that shifting of settlement and cultivation was necessary if the community was dependent solely on tillage.

In Saudi Arabia, and in particular at Al-Hasa Oasis, man has for centuries cultivated sandy soils using irrigation techniques. He has not had the advantages of being able to move his settlements due to the restricted area in which good-quality water was available. Consequently, to minimise the leaching of nutrients and deterioration of fertility, he has had to take care of the soil and has tried to add manure regularly to maintain fertility and to grow crops that required only limited fertility, for example dates.

According to the Leichtweiss Institute[1], the soils of Al-Hasa Oasis as well as the surrounding areas "originate mainly from sedimentation of aeolian sand covering older Quaternary layers and young Tertiary sand marl on limey ground or sandstone." It would seem that the soils of the Oasis area have changed considerably over the centuries, through physical and human agencies that have affected the area, such as climatic change and associated vegetational changes (though the latter have also been caused by man) and the type of agricultural practice used in cultivating the soil.

The soil within the Al-Hasa Oasis area has been described by the Leichtweiss Institute[2] as being sandy loam, with its main characteristics being:-

(a) Sandy: sand contents are on average about 79%.

(b) Calcareous: the soil contains, on average, about 25% calcium carbonate in the upper 100 cm., but contents reach maximum values of about 70% at depths of 50-100 cms. of soil. Crops, whose main rooting depth this is, are likely to experience nutrient uptake difficulties, as the free calcium carbonate makes many nutrients unavailable.

(c) Salinity: the striking feature in the soil of Al-Hasa Oasis is its salinity. Over-irrigation is, according to Stevens, a common practice in the area, and while the surplus water drains towards the east, the salinity of the irrigation water also increases to over 6 mmhos* per centimetre at 25°C in the extreme eastern part of the Oasis. Over-irrigation with highly saline water has caused large areas in the Oasis to go out of cultivation.[3] The Leichtweiss Institute estimated that, during the past 15 years, the arable land of the Oasis decreased by about 50% to an area of only 8,000 hectares due to the salinisation of the soil.[4] The increased salinity of the soil is, indeed, caused by the combination of several factors:-

(a) the high salinity of the water already mentioned; (b) the climate induces rapid evaporation which tends to concentrate soluble salts on the surface; (c) the lack of natural drainage in the Oasis due to the lack of any marked relief features; (d) the high water level in the area, which has been induced by over-irrigation over many centuries. This groundwater is highly saline (more so than the irrigation water) due to its accumulating salts as it leaches through the soil.

Climatic extremes in the area (see Chapter 6) together with the

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*mmho is a measure of the electrical conductivity of an irrigation water or soil moisture which increases with salinity.

high evapotranspiration needs of plants requires the application of large amounts of irrigation water. As each cubic metre of irrigation water carries, according to the Leichtweiss Institute,[5] approximately 2.0 kgs. of salt into the soil profile, about 65 metric tons of salt are added per hectare during one year of normal irrigation. The existence of an almost impermeable layer underlying the top soil of the Oasis between 0.40 m. and 2.20 m. below the surface prevents to a large extent the downward movement of water and of salts in solution into deeper soils. It does not allow natural drainage and leads to a very high water table. The salt accumulation in the root zone of the soil becomes severe as capillary action causes the evaporation to continue even after the actual irrigation has ceased.

Soil salinisation in Al-Hasa Oasis has been accelerated during the last 15 years mainly by two factors: (1) sand drifts and advancing sand dunes blocked the courses of the natural drainage of the Oasis, which led to the evaporation lakes, so that the surplus saline water accumulated in the arable land led to the rise of the water table. Consequently, the salinisation of the soil was rapidly increased. (2) The efficiency of the traditional system of water distribution in the Oasis forced the small farmers in areas distant from the artesian springs to used the drained water for irrigation purposes. In many cases the same used water is frequently re-used, despite its high salt concentration. This process, however, increased the salinity of the soil and consequently led to infertility in large areas of the Oasis.

It seems that soil salinity increases gradually from west to east till one reaches the evaporation lakes at the extreme eastern borders of the Oasis. It should be pointed out that the agricultural areas of the western part of the Oasis do not suffer from the high salinity problems, and agriculture has been relatively unaffected by problems of salinity.

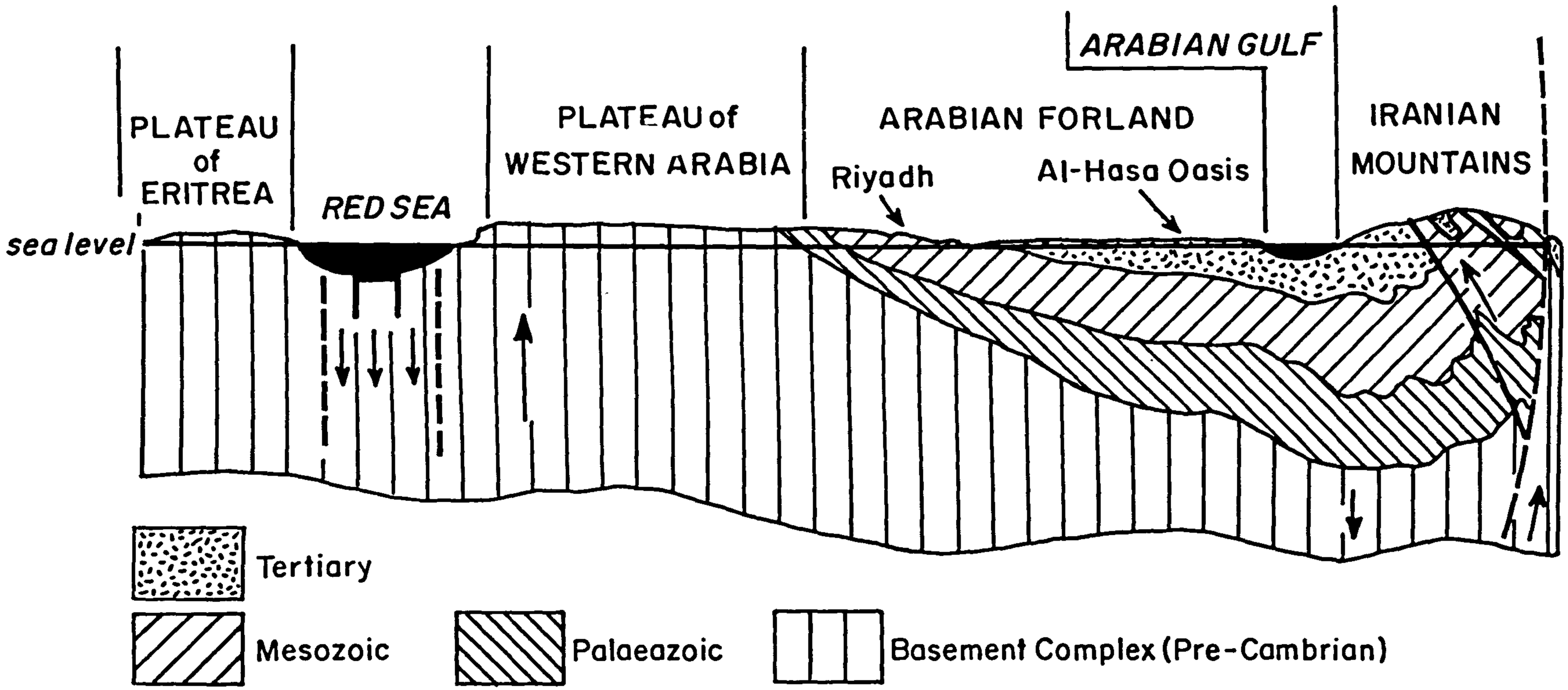
7.2 Water Resources

Springs and water wells existing in the Oasis are subject to the geology of the area already described in Chapter 5. The rock formation of Saudi Arabia slopes gently to the north-east from central Arabia towards the Arabian Gulf[6] (Fig 7.1). Thus the rain which falls in the Eocene strata of central Arabia quickly infiltrates into the underground layers and drains eastwards towards Al-Hasa Oasis and other parts of eastern Arabia. The difference in altitude between central Arabia and Al-Hasa Oasis is about 300 m., and this causes hydrostatic pressure, which forces the water to the surface. The origin of the present water of the area showed, according to Saxen,[7] "a mixture of fossil and recent water,"with 10 to 20% being of recent origin. The age of the fossil water is estimated as between 13,000 and 17,000 years. This indicates that, while the Oasis receives some of its water supply from central Arabia, through gravity it has also its own stored water, which has been accumulated in the aquifers of the Eocene strata through past geological ages. It is interesting to note that Eocene strata also emerge in the Anatolian Plateau of eastern Turkey and dip down towards eastern Arabia in the south until they reach the Rub Al-Khali (Fig 7.2). It may be that eastern Turkey is a third source of the Oasis water.[8]

However, artesian water in Al-Hasa Oasis is, according to Naimi[9] extracted from the Neogene Aquifer System, which is the major source of many of the flowing springs of the area. The water-bearing beds of the Neogene deposits of the area are also supplied with groundwater, mainly, or almost entirely, through the upward discharge of seepage from the underlying regional Eocene.

It should be stated that springs and wells are the only water supply in the Oasis. Therefore they are vital.By contrast with the wells,

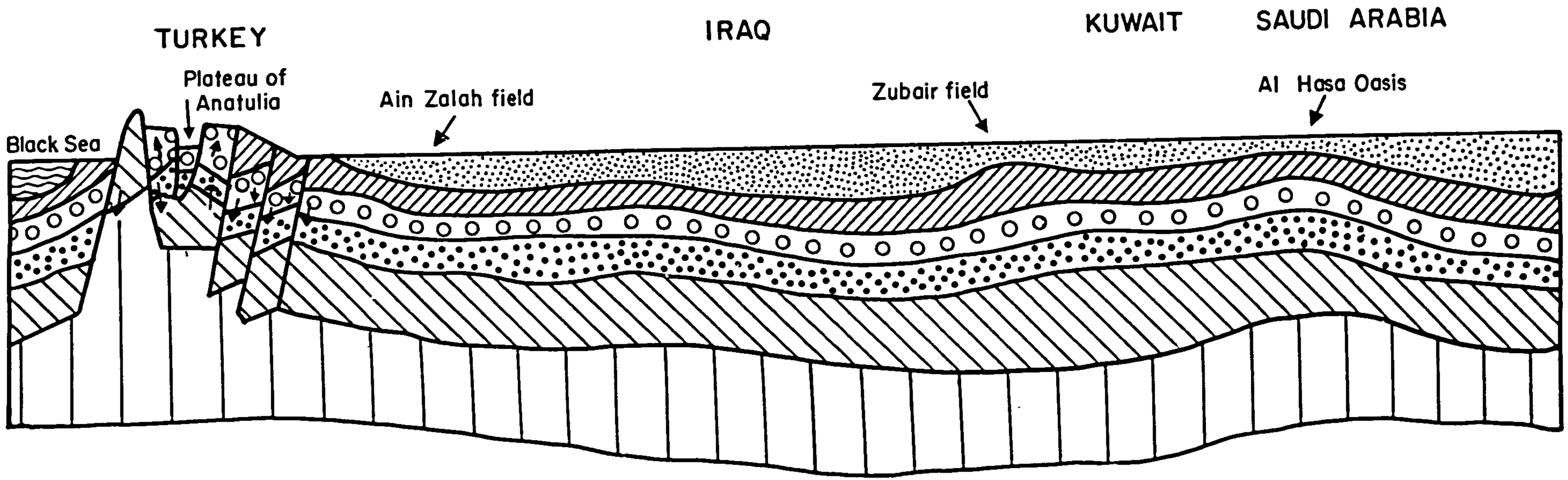
Fig. 7.1 WEST-EAST CROSS SECTION



Note: Quaternary not shown on this figure

After: Aramco 1968

Fig. 7.2 NORTH—SOUTH CROSS SECTION



QUATERNARY NOT SHOWN (AFTER ARAMCO, 1968)

the springs have a natural source. All springs in the Oasis area are artesian confined, but the artesian pressure is not in all cases sufficiently high to let the water flow out in a natural fall, by gravity; in some cases it must be mechanically raised.

However, the distribution of the larger springs in the Oasis can be recognised as forming two main groups. One group is located near Hofuf town, and the other is situated near Al-Mutairifi village in the northern part of the Oasis (Fig 7.3). Several smaller springs are scattered throughout the Oasis area. According to Wakuti,[10] most of the 162 recorded artesian springs existing in the area extract their water from a depth of 150 m. in the Neogene strata. Their water quantities varied between 0.001 m^3/sec and 1.700 m^3/sec, but the total outflow of all springs is estimated according to Burdon[11] at 14.0 m^3/sec while Saxen[12] put it as 14.6 m^3/sec.

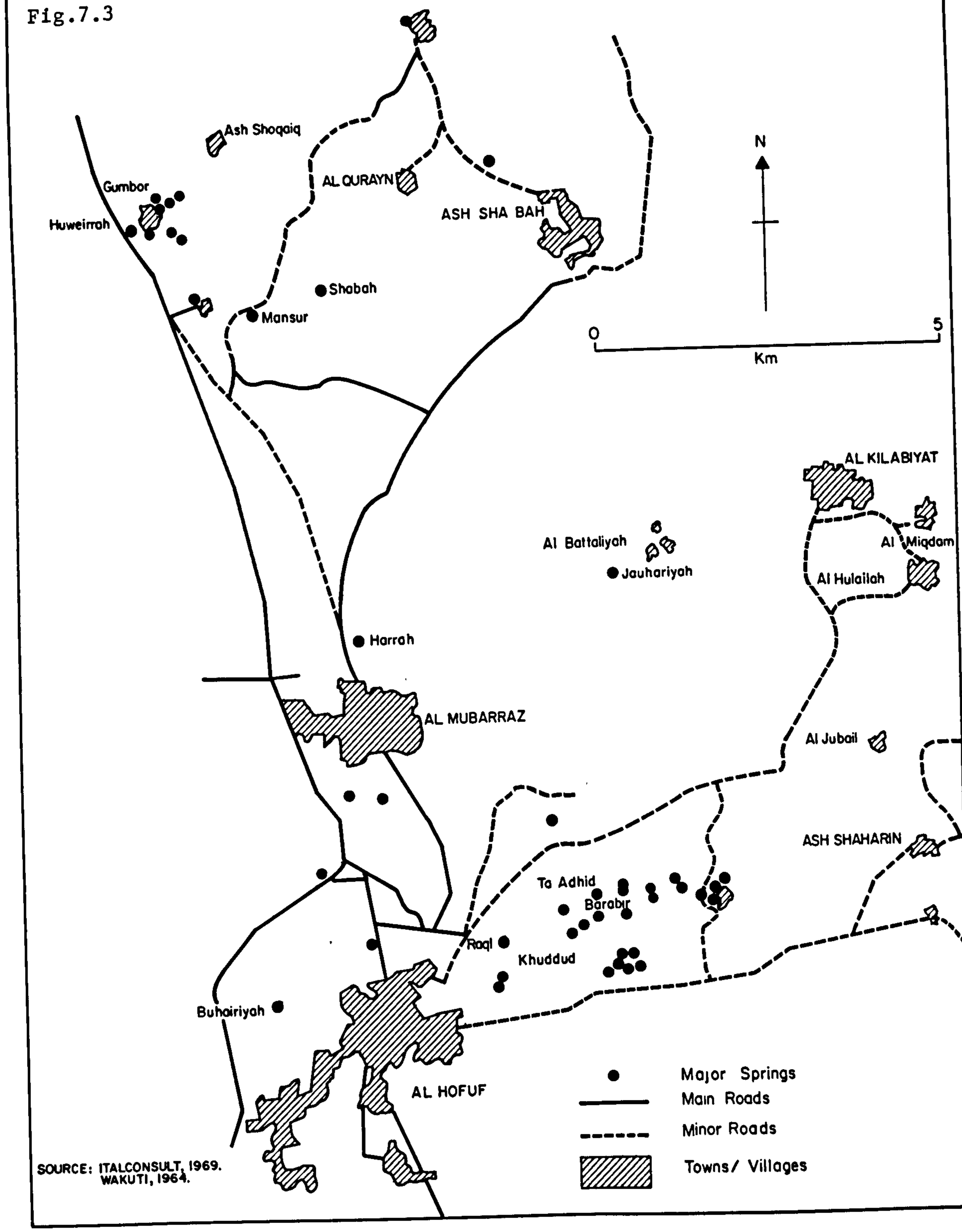
In contrast to the springs, which have a natural origin, the wells are drilled or dug. Some of these wells are artesian discharge, often with a high water pressure. These wells do not need devices to raise the water to the surface. Some other wells which have insufficient pressure to let the water flow up to the surface do, indeed, need the installation of water pumps so that water may be brought out of the ground.

There are 336 wells spread over the total Oasis area. Most of them were bored during the late 1950's and the early 1960's. Usually they are found in small gardens which are not reached by the traditional canal of the springs. The distribution of these wells is illustrated in Table 7.1.

Water quality in the Oasis is classified as good, with 1,400 ppm. soluble salts. In general, this amount of salinity is not considered harmful to agriculture if drainage is carried out. To be more specific, whilst some plants are not salt-tolerant plants - such as fruit - other plants, such as date-trees, have flourished on this water in the Oasis for thousands of years.

AL HASA OASIS MAJOR SPRING LOCATION MAP

Fig.7.3



SOURCE: ITALCONSULT, 1969.
WAKUTI, 1964.

TABLE 7.1

Distribution of Wells in Al-Hasa Oasis

(Wakuti, 1968[13])

Number of Wells	Location	Remarks
57	Al-Uyun district	Some wells dilapidated, while others are abandoned.
16	Around and south of al-Waziyah village	Five wells dilapidated, but water in all wells is raised by pumps.
4	North of Julijilah	
4	North ash-Shabah village (1.4 km.)	
1	2 kms. south-east of al-Mutairifi village	A pump installation is used.
21	South al-Qurain village	Some of them are artesian wells, or have pumps.
8	South-west and south of ash-Shabah village	
32	North-east of Mubarraz town	They are either artesian or pump-operated.
4	East of Jauhariyyiah spring in the interior of the Oasis	
18	4 kms. east of Mubarraz	
89	West and south of Hofuf town	All equipped with pumps.
4	Around al-Jubail village	
8	South-east of at-Tuhaimiyah village	
9	South of at-Taraf	All equipped with pumps.
11	North-west of al-Jishshah village	Artesian wells.
9	South and east of al-Markaz village	Artesian wells.
3	West of Al-Umran district	Artesian wells.
1	South-east of al-Qarah village	Artesian wells.
25	In the region of al-Huleilah village	Artesian wells.
2	West of al-Kilabiyah village	Artesian wells.
10	Spread all over the Oasis	Artesian wells and pumps.
336	= Total Number of Wells	

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PART THREE

EVOLUTION OF SETTLEMENT

CHAPTER 8

ANCIENT SETTLEMENTS

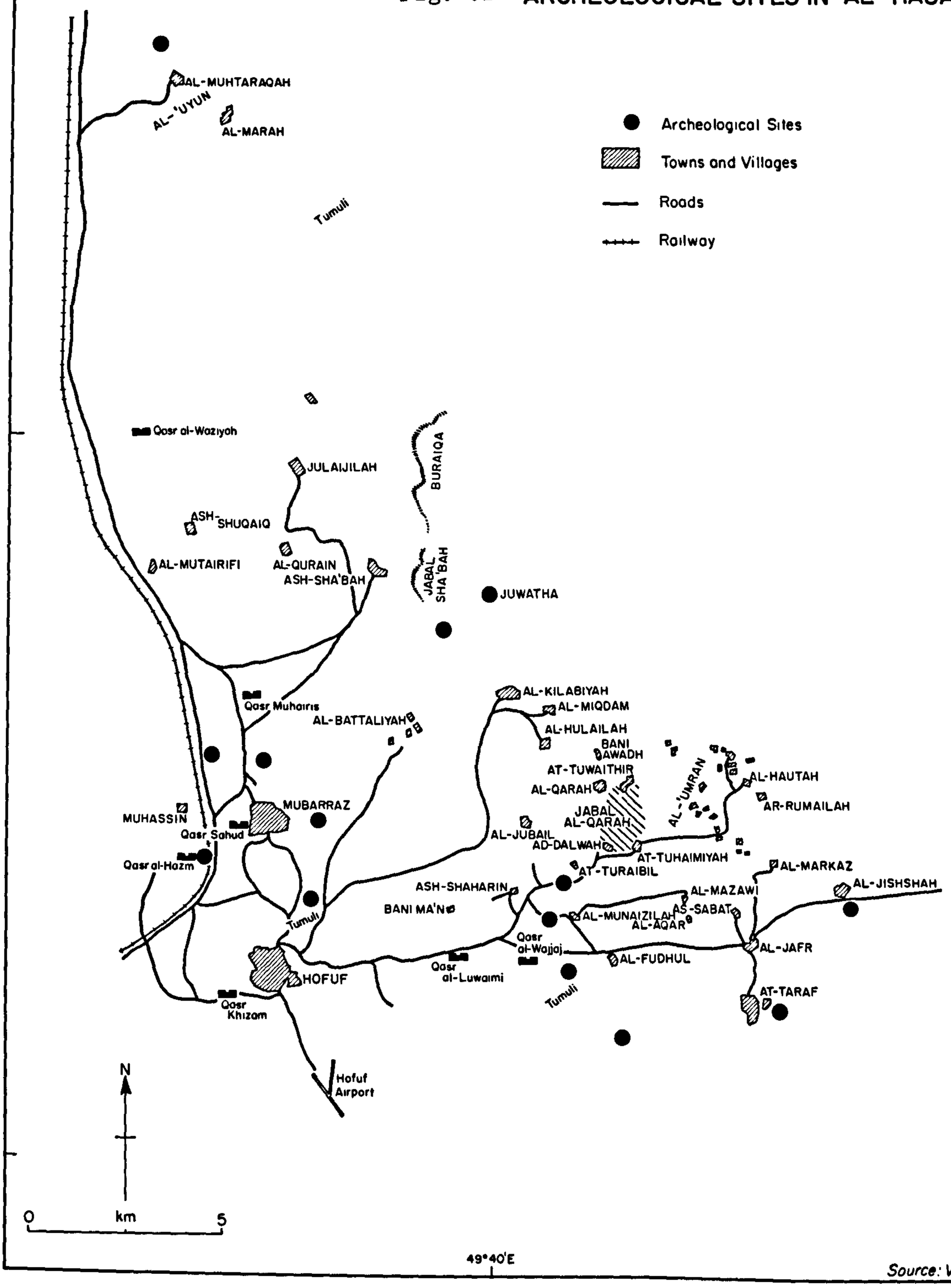
8.1 Al-Hasa Oasis in Antiquity

Whilst many ancient cities in the Middle East have been studied in detail, our knowledge of the ancient cities of Arabia, and in particular the eastern part of Saudi Arabia, is still only fragmentary. Yet evidence indicates that eastern Saudi Arabia may at one time have been a boom area which only declined due to major human and natural calamities, such as tribal unrest and the encroachment of sand dunes upon the arable land and settlements.

Although no major archaeological work has been carried out in Al-Hasa Oasis, evidence from excavations carried out in the neighbourhood, on Failakah and Bahrain Islands,[1] has revealed a sophisticated urban structure.[2] On the mainland of the Eastern Province of Saudi Arabia many archaeological sites were described and observed by Cornwall.[3] In the Al-Hasa Oasis alone, Vidal gave a primary description of some 16 archaeological sites.[4] (Fig.8.1)During the field work of 1972, the author was able to collect some information on the historical remains in the Oasis (Appendix A). All the information suggests that Al-Hasa Oasis and the surrounding areas flourished in the past. According to Golding, "The late Stone Age occupants left their works everywhere". Worked flint and pottery sites are widespread in the area." The earliest pottery site so far discovered is on the northern edge of Al-Hasa Oasis."[5]

It seems that the early settlement in the area was largely motivated by the existence of a large number of natural springs which fortunately still exist, mainly in Al-Hasa Oasis (Chapter 7.). The flatness of the surface of the area (Chapter 5.) also provided the early settlers with a vast area for cultivation and agricultural production. The surplus products provided ready commodities for export to the surrounding areas. Cornwall suggests that "beginning as early as 2500 BC the Sumerians appeared

Fig.8.1 ARCHEOLOGICAL SITES IN AL-HASA OASIS



Source: Vidal, 1955

to have imported highly prized dates from Hasa [Al-Hasa] by way of Bahrain Island; and in the days of Sargon (722-705 BC)...Hasa and Bahrain formed a single kingdom, as indeed may also have been the case in earlier centuries".[6] A cylinder seal dating from 2000-1800 BC has been discovered at Thaj, 95 kms. inland from Jubail.[7]

Unfortunately, the history of the Oasis has not yet been studied in detail, but it has been suggested that the region called Attene in antiquity is the same as the present-day Al-Hasa Oasis. Pliny says: "50 miles from the coast, lying in the interior is the region of Attene, and opposite to Gerra is the Island of Tylos[8] [Bahrain]". Pliny's measurements are in Roman miles. Al-Hasa Oasis is only 47 Roman miles from the coast and it is the only habitable and important inland region in the whole of eastern Arabia. Again, the lack of excavations in Al-Hasa Oasis hinders an understanding of the origins of settlement in the area. However, this area has long been sedentarised and the Gulf communities had at various periods a flourishing trade with each other and with India, Mesopotamia and southern Arabia as well.[9]

Classical writers and Arab historians have left vivid descriptions of these ancient cities of the Oasis. Ptolemy, in the middle of the second century AD, mentions for the first time a place called "Iolisitae". Forster considered that Iolisitae meant "Ul Ahsanys or the inhabitants of Ul Ahsah [Al-Hasa Oasis]".[10] Cornwall suggested that "in Pliny's times it [Al-Hasa Oasis] must have been, as now, a well populated area. Caravans naturally would have halted there on the long journey from Gerra to the Hadhramout or the Mediterranean."[11] Undoubtedly, Al-Hasa Oasis was the only habitable and important location before the caravans crossed the large expanses of desert to central Arabia, on their way to southern Arabia or the Mediterranean region.[12]

There is a lack of information on the Oasis during the early Islamic

period, but remains of Umayyad and Abbasid pottery observed by Vidal[13] suggest that the Oasis of Al-Hasa was already densely inhabited. Today Al-Hasa Oasis has many ancient sites which stand as evidence of its glorious past (see p.149). The most significant sites being the formerly important settlements of the Oasis, such as Hajar, Juwatha and Al-Hasa, which will be described here.

8.2 The Vanished Towns

Hajar is thought to be the most ancient city in the Oasis. Although its history cannot be traced with certainty, the available material undoubtedly indicates that it is of considerable antiquity. Forster[14] traced its name back to the earliest Ishmaelite settlers who dominated this area after they expelled or absorbed the primitive Kashite population in the days of Ishmael. He stated that Hajar was named after the mother of Ishmael.

The Arab chroniclers such as Ibn Khurdadhabeh, who wrote about 864 AD, referred to Hajar, which was probably not far from the present Hofuf town, as "one of the important settlements in Bahrain[15] [eastern Arabia]". Some years later, Ibn Al-Fakih of the ninth century AD stated that "the name of eastern Arabia was Al-Bahrain and its capital was Hajar".[16] In the tenth century AD the town was invaded by Abu Tahir Sa'id Al-Janabi (the Carmathian leader) and destroyed.[17]

These authorities throw some light on the fluctuating fortunes of Hajar city. Although there are no figures for the size of the city, it seems likely that Hajar town reached its highest level of development in the ninth century AD as a capital of eastern Arabia.

With the destruction of Hajar city in the tenth century AD, a new town called Al-Hasa began to emerge. Ibn Haukal in 978 AD mentioned for the first time the name of Al-Hasa as "one of the towns in the region".[18] In less than ten years, according to Al-Maqdisi in 985 AD, Al-Hasa town

became the capital of the whole province, which became known as Hajar instead of Bahrain.[19]

However, Yaqut Al-Hamawi in 1224 AD says that "Al-Hasa town was built by Abu Tahir Sa'id Al-Janabi [the Carmathian leader] in 317 AH [929 AD] to serve as a capital for his dynasty".[20] This statement has been supported recently by the two local historians, Sheikh al-Abdal Qadir[21] and Sheikh al-Mubarak.[22] Certainly there is no mention of Al-Hasa by Ibn Khurdadhabeh in 864 AD according to the commentary by Willson.[23] However, the article on Hajar in The Encyclopaedia of Islam[24] suggests that the name of Al-Hasa was already in use at the time of Abu Tahir, viz, before 926 AD. What is certain is that a palace or fortress was built in or next to the locality of Al-Hasa by either Abu Sa'id Al-Janabi, the Carmathian leader, or his son, Abu Tahir, who made it the capital of the region. He called the place Al-Mu'miniyah, but this name apparently was not accepted by the people. From the beginning of the tenth century AD the use of the name Al-Hasa spread, and Hajar was slowly abandoned.[25]

It seems that the growth of Al-Hasa town and its elevation from the primitive state was a reflection of the downfall of Hajar. Al-Hasa, then, inherited the old importance of Hajar and became the chief city and capital for the whole region. There was a transference of political, economic and social activities from the old capital of Hajar to the new capital of Al-Hasa. This transference of power was probably accompanied by a large population movement to Al-Hasa town. Consequently, Al-Hasa town grew and flourished, while Hajar declined and finally disappeared, presumably at some time during the second half of the twelfth century, since Al-Idrisi,[26] writing in 1154 AD is the last writer to mention Hajar among the towns of Bahrain or eastern Arabia.

As Al-Hasa town owes its existence and development to the rise of the Carmathian State in eastern Arabia, it is assumed that this town con-

tinued to flourish with the growing power of that state. Furthermore, the decline of this town can also be related to the waning power of the Carmathian dynasty. Nasir Khosro, who visited Al-Hasa town in 1051 AD, gives us a very interesting account of the city in his day. He says:*

> Lahsa (Al-Hasa) consists of a town together with outlying quarters surrounded by four strong walls made of clay. Each wall is separated from the opposite one by a distance of one farsakh [6 km. approximately]. There are several springs in the town, each capable of turning five water mills. The water is so well utilised that none of it runs outside the walls. Within the walls this fine town possesses all the amenities of a great city, and it has a population of 20,000 fighting men. Formerly, Lahsa had as its sovereign a nobleman called Abu Sa'id. He discouraged the people from prayer or fasting and told them to adhere to his own sect, though he recognised the prophecy of the Prophet Muhammed and the validity of the mosque. His tomb is in the interior of the town and over it a beautiful shrine has been built.
>
> Abu Sa'id's descendants are now ruling Lahsa from the seat of government in Lahsa town. Sitting upon thrones in council they handle their affairs. They are assisted by six vazir [Ministers] who decide all matters together with the council.
>
> When I was at Lahsa, these princes possessed 30,000 slaves who had been bought in Abyssinia and were employed free in cultivation and gardening for the people...Some of the mills at Lahsa were owned by the state. In these corn was ground into flour for the people without charge. The upkeep of these mills and the wages of the workmen were charged to the state...
>
> Futah [a kind of cloth] of high quality is manufactured in the town of Lahsa.[27]

Thus this traveller gives us a fairly good idea of the probable size of the town, its political system together with some of its building as well as the general shape of the town during Carmathian times. The town's sphere of influence at that period was great. The Carmathians, from their seat at Al-Hasa, dominated most of eastern and central Arabia. They even invaded Mecca in 317 AH (929 AD), as stated by al-Abdal-Qadir, massacred many pilgrims and carried back the holy Black Stone with them to Al-Hasa[28] with the intention of diverting the pilgrimage from Mecca to Al-Hasa. Twenty years later they returned it to Mecca after receiving a

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*The original Persian is obscure in places, and there is therefore some variation in details between translations of this passage.

ransom.[29]

The glory of Al-Hasa did not last long. An Arab army marched against Lahsa (Al-Hasa) and, after a year's siege, stormed its four walls and carried off a great quantity of booty, but failed to conquer the people.[30] This event, for which no date is ascribed, probably indicates the beginning of the end of Carmathian power in eastern Arabia and in particular in Al-Hasa Oasis.

By 1078 AD the Carmathians (Arabic Al-Qaramitah) were driven from Al-Hasa Oasis by the Al-Uyuni dynasty and disappeared. With their disappearance, Al-Hasa town lost much of its raison d'être and started to diminish in importance, so that by the time of Abul Fida, viz, 1321 AD, Al-Hasa town seems to have gone into decline. He says "the town is small... and devoid of walls".[31]

After this statement we do not hear of Al-Hasa town again. It is not known whether it disappeared or became unworthy of mention. However, the local historian, Sheikh Al-Mubarak, says, "It [Al-Hasa town] was in its last days called Al-Battaliyah because Abdullah Ibn Ali Al-Uyuni (the Al-Uyunis' leader) granted it to his step-brother, Battal Ibn Malik in 470 AH [1077 AD]".[32] It is not known whether the old Al-Battaliyah (Al-Hasa town) is the same place as the present Al-Battaliyah village.

In fact, the relative location of Al-Hasa as well as the ancient Hajar town is a matter of considerable controversy between historians. Yaqut Al-Hamawi of 1224 AD considers Al-Hasa to be a town built on the site of Hajar,[33] whilst Wustenfeld, according to Vidal, puts a distance of about two days' march between the two cities.[34] Vidal himself believes that "the new capital [Al-Hasa town] was north of Hajar, probably not very far from it, though not contiguous".[35] The local historians such as Sheikh al-Abdal-Qadir[36] and Sheikh Al-Mubarak[37] suggest that the location of the ancient Al-Hasa town is near the present village of Al-

Battaliyah.

Some historical remains, believed to be of the ancient Al-Hasa town, still exist inside the gardens near the present Al-Battaliyah village. One of these remains is called "Qasr Qraimet"(Palace of Carmath). The other is named "Al-quhaibat"(the Bawdy House), which was used in Carmathian times as a detainee centre for adulteresses.[38] These remains, if they are genuinely of the old Al-Hasa town, seem to support the claims of both Sheikh al-Abdal-Qadir and Sheikh Al-Mubarak.

The third important ancient settlement of the Oasis was Juwatha town. Its location is still evident, north of Al-Kilabiyah village. The town owed its existence and development to the tribe of Bani Abdul Qais, which migrated, long before the advent of Islam, from Hejaz to eastern Arabia and settled there. When Islam was introduced, they were the first people to accept it in eastern Arabia. Juwatha then became probably a strong Islamic centre from which Islam was introduced to the rest of eastern and central Arabia.

Today little remains in Juwatha town from the early Islamic Era. The mosque, which was probably located inside the town centre, was built partly of local stones and partly of very old brickwork. This mosque was the first to be built in eastern Arabia and was second only to the holy mosque of Medina in performing the Friday Prayers.[39] When al-Abdal Qadir visited the site, he stated that: "nearly seventy steps to the north-west of the mosque there is a remnant of a large dome visited by the inhabitants of the nearby villages. A spring located 220 steps to the east of the mosque was still in use for drinking water. The cemetery of the town was located fifteen minutes walking from the mosque in a south-west direction".[40]

It seems that Islam was the original factor which contributed to the development of this settlement. The town probably reached its highest level of development during the early Islamic Era as a centre for Islamic

conquests in eastern and probably central Arabia. Juwatha town continued to exist up to the ninth century AD, for Ibn Khurdadhabeh,[41] who wrote about 864 AD, mentioned it among the towns of Bahrain (eastern Arabia). After this date there is no mention of it, which probably means that the town declined in importance and gradually disappeared. However, the encroachment of sand dunes upon the town and its arable land also contributed to its disappearance. The site of this town is now well inside the sand dunes. The government in 1962 initiated the Sand Stabilisation Project[42] to protect the other settlements to the south of Juwatha, since it was apparent that many of these would be lost in the same way as Juwatha.

From what has already been discussed in this chapter, it is clear that, although the origin of the earliest settlements of Al-Hasa Oasis cannot be traced with complete certainty, one can at least indicate the most important factors, both human and physical, that may have affected their development, decline or disappearance.

Fertile soil, plentiful water, the favourable political and religious situation and also trade played a positive role in giving these settlements reasons to exist while deprivation of some or all of these advantages led to their decline or complete disappearance. In this respect the history of Al-Hasa Oasis towns can be compared with that of towns in other parts of the Middle East, as discussed in Part I. What makes Al-Hasa Oasis a unique area in this region, is the continuous encroachment of sand dunes upon the area; this led, in the past, to the decline and destruction of the famous town of Juwatha and to the disappearance of a score of smaller settlements, together with their agricultural lands in the northern part of the Oasis.

The following chapter will deal with the contemporary urban settlement of Hofuf and Mubarraz and an examination will be made of their development process, the traditional physical structure and their morphology.

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CHAPTER 9

EVOLUTION OF URBAN SETTLEMENT

It is easier to explain why settlement came into being in these arid areas than it is to explain its subsequent evolution. The physical configuration of Saudi Arabia has always limited the areas of settlement to the oases where water is available. At Al-Hasa springs have always provided a ready supply of water. If some of these settlements, such as the complex villages of the Oasis, were located on the caravan routes, they would grow in size and importance faster than other settlements situated away from the traffic routes. Such advantages would change the former from traffic halting points into marketing centres for nearby settlements.

9.1 Origin and Evolution

As has been pointed out previously, human settlement in Al-Hasa Oasis reaches back into early history. It is therefore very difficult to assess the period at which the settlements which were to become Hofuf and Mubarraz originated. Zwemer[1] and Shiber[2] were probably misinformed when they considered Hofuf to be one of the oldest settlements in Arabia. They considered that Hofuf occupied the same site as the ancient Hajar, though the present evidence suggests otherwise. It also appears that Hofuf does not occupy the same location as the old Al-Hasa town. Relative to the ancient settlements of the Oasis, it appears that the settlements have moved southwards, possibly as a response to invasion by moving sand dunes from the north. This fact may suggest a comparatively late date for the establishment of Hofuf and Mubarraz towns. There is again conflicting evidence for early Islamic pottery found by Vidal[3] on the surface a few hundred yards from the city wall could suggest that the area around Hofuf might well have been inhabited during Carmathian times.

However, Vidal indicated that the political leaders and rich merchants of ancient Al-Hasa owned some date gardens in a place called Hofuf,

or rather Al-Hufhuf, immediately outside Al-Hasa's walls, where they went during the summer, and that this place eventually became their favourite and permanent residence. This place was given the name of Hofuf, which means "cool and breezy place", and later became a permanent settlement.[4] It appears that Hofuf was probably built in Carmathian times, a supposition supported by Rihani.[5] Constructed on a rocky limestone plateau to serve mainly as a recreational place for the rich people of the old Al-Hasa town, it gradually grew into a commercial centre on the ancient caravan route between the Gulf area and central Arabia.

The origin of Hofuf cannot be traced with complete certainty, but the origin of Mubarraz (the second largest town in the Oasis) is even more vague. Some writers such as Philby and Vidal tried to establish its origin by merely analyzing its name. They claimed that Mubarraz was derived from the same root as the word tabriz which was applied by the Bedouins to indicate the gathering place at which the travellers inspected their requirements before the start of the long journey across the desert. It was a habit during the time of caravan travel* for travellers to start off late in the day(to avoid the mid-day heat) and erect a camp at a distance of three to five km. from their point of departure. In this way, after a night's stay anything lacking in the requirements for the journey in the way of food and equipment would be discovered and more easily corrected the following morning than if the caravan had travelled a day's distance from the town of origin.[6] This explanation, together with the short distance between Hofuf and Mubarraz (4 km. apart) and the location of the town on the main route between Qatif Oasis and Central Arabia would support the hypothesis that Mubarraz originally started as a camping ground for caravans engaged in trade with the oasis.

It is likely that Mubarraz gradually developed from a camping ground

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* Before the introduction of automobile and air travel into Arabia.

for travellers into a small settlement largely as a result of the activities of traders and other travellers. We cannot give an accurate date for the establishment of Mubarraz but we might suggest 1573 AD as an approximate date. By this time the town was known to be in existence as it was mentioned among the settlements of the Oasis by the Ottoman Administration of the area at that time.[7] It is known as we will see later, that the Bani Khalid dynasty, who governed Al-Hasa Oasis and some other parts of eastern Arabia between 1670 and 1790, used Mubarraz town as their political capital.

Hofuf and Mubarraz, the two principal towns in the Oasis, are situated beside cultivable land on the old caravan routes between the Arabian Gulf and east and central Arabia. Al-Hasa Oasis is endowed with abundant natural springs, and it subsequently came to be regarded as the largest Oasis in Arabia. Mumford pointed out that "the existence of an agricultural area is relevant as it has been accepted that an agricultural surplus is a prerequisite of the urban 'impulsion' which brought about the city".[8] This hypothesis has been lately rejected by Jane Jacob who claimed that city and urban life preceded agriculture[9] (see Chapter 1). This later proposition has not yet been proved in the case of many cities in Saudi Arabia, particularly the towns of Al-Hasa Oasis. However, most of the urban centres in Saudi Arabia have originated and still do originate in agricultural areas with production surpluses. Thus the hypothesis of Mumford is still valid and applicable in the case of Al-Hasa Oasis. As an agricultural area Al-Hasa Oasis did indeed produce three ancient cities (Hajar, Juwatha and Al-Hasa), as has been seen in the previous chapter, before the contemporary towns of Hofuf and Mubarraz and the 52 villages which now make up the Oasis.

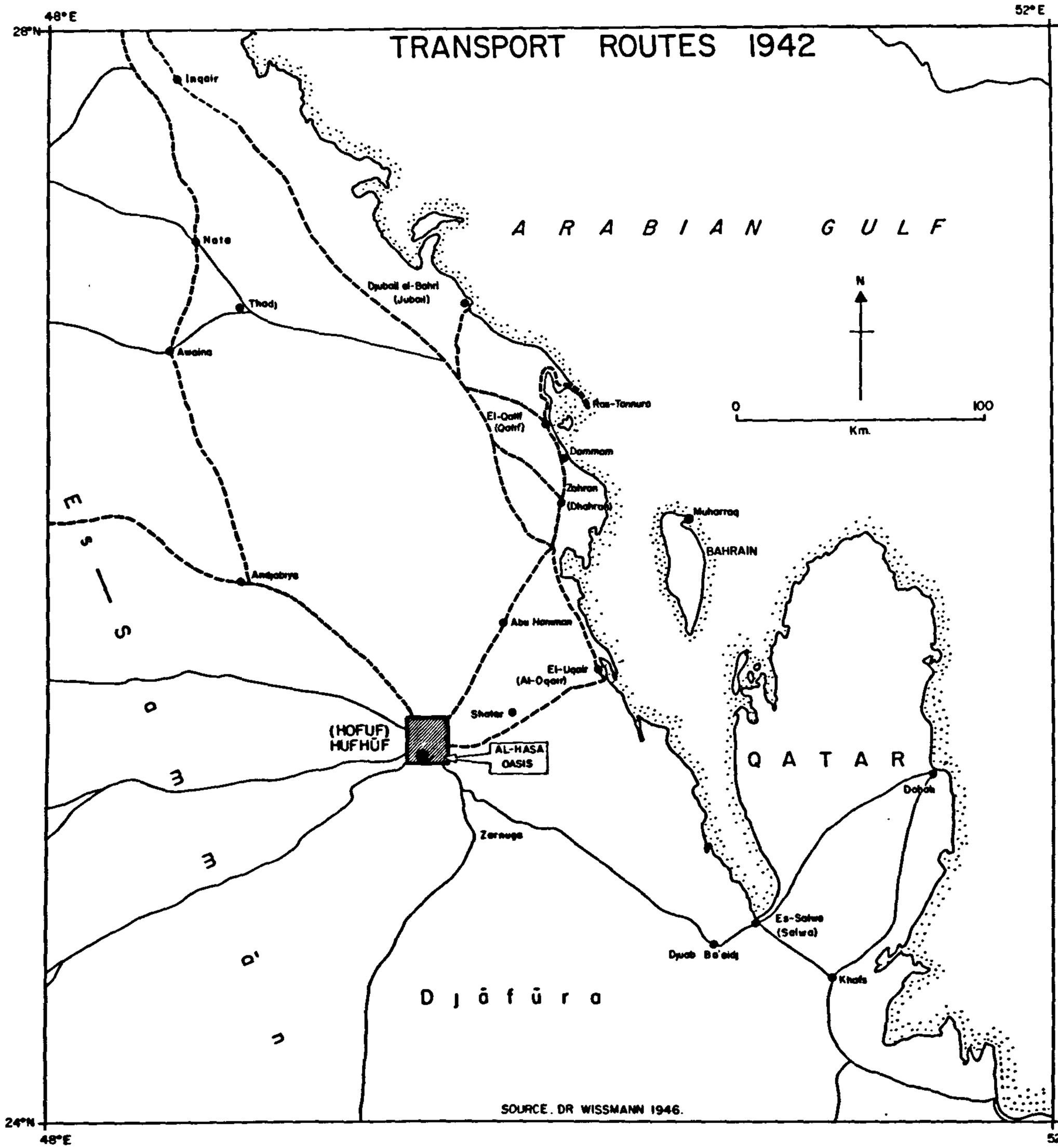
The cultivated area which was watered by the springs thus became the major settled area in eastern Arabia. Its importance was further in-

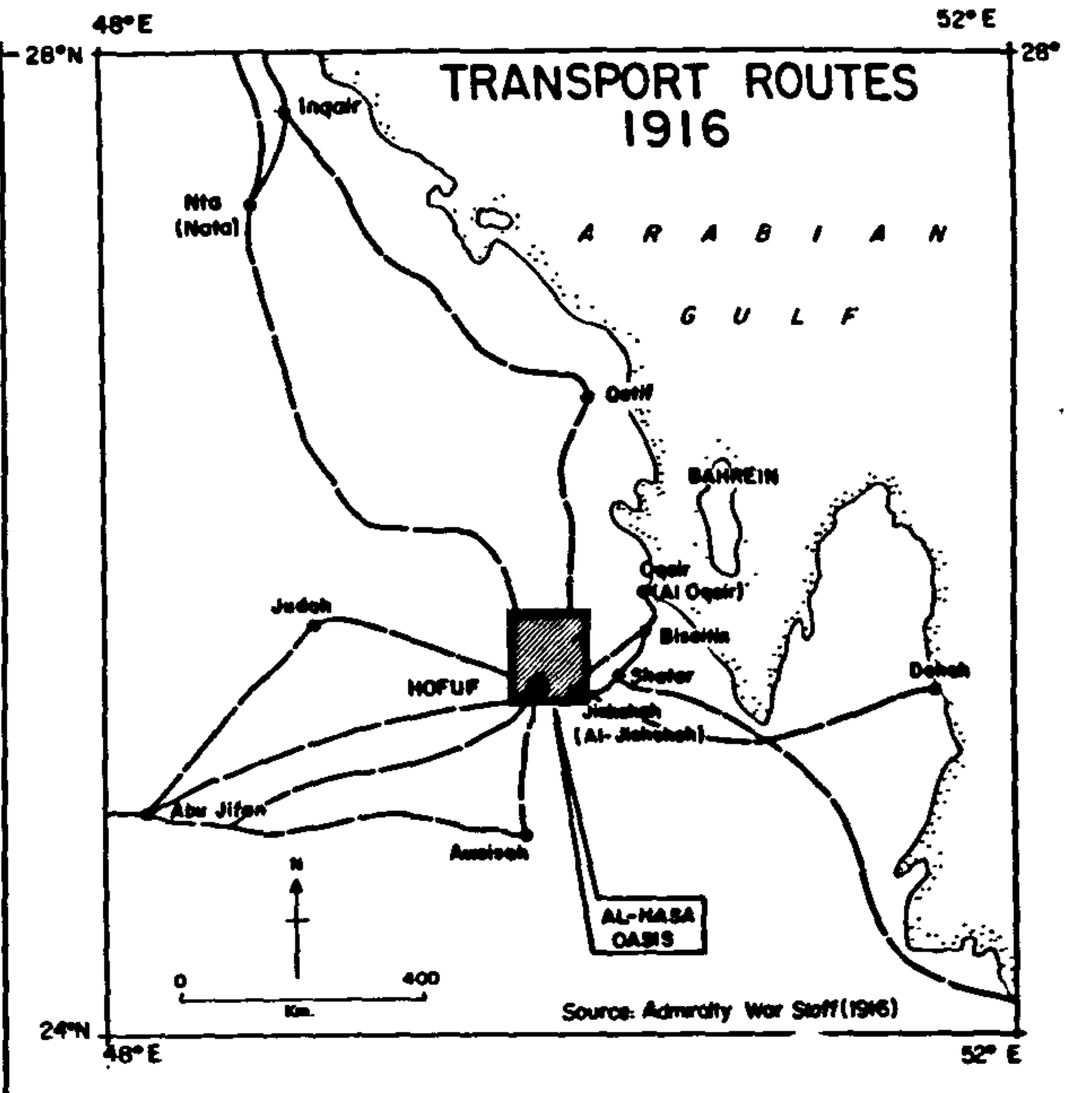
creased by its location on the ancient caravan routes from Gerra on the Arabian Gulf to the Mediterranean region and south Arabia as indicated by Hogarth,[10] and Vidal.[11] Along these routes goods were exchanged between the three regions, especially frankincense and spices from southern Arabia and India. Al-Hasa Oasis, especially Hofuf town, was always the focal point of traffic up to the time of the discovery of oil in eastern Saudi Arabia (Fig 9.1). Its position in an agricultural oasis densely populated by settlers and its surplus produce in relation to the rest of eastern and central Arabia made it the hub of routes rather than merely a link in a chain.

However, information relating to the early urban history of Hofuf and Mubarraz is incomplete and sometimes lacking. The successive wars between the occupying forces brought unrest in the area. Consequently, it was dangerous to travel in Arabia, for tribes were at war with each other, with the settled population and even with the authorities. Bedouins used to attack the settlers and travellers, robbing them of their property and sometimes murdering them. These barbarous actions were encouraged by some of the Turkish authorities in Al-Hasa Oasis.

By the middle of the sixteenth century AD the conquest of eastern Arabia by the Ottoman Empire was completed, and Hofuf was then chosen to be the administrative capital of Al-Hasa Province[12] (eastern Arabia). It seems that Hofuf grew and developed rapidly as an administrative centre. Despite the changing governments in Al-Hasa Oasis, Hofuf continued to fulfil this function until 1938, when its position was initially challenged by Dammam due to the discovery of oil there.

Since the Al-Hasa Province of the Ottoman Empire was a frontier province, it was considered by the Ottoman government to be in the front line of defensive military operations against the Portuguese. Thus, Hofuf also became a military centre, a significant function which gave the Oasis





TRANSPORT ROUTES 1916

TRANSPORT ROUTES 1942

MAIN TRANSPORT ROUTE 1942

SECONDARY TRANSPORT ROUTE 1942

STUDY AREA

Fig.9.1

DOMINANCE OF AL-HASA IN THE ROAD NETWORK OF EASTERN PROVINCE IN THE PRE-OIL ERA.

a role unique among the other settlements of eastern Arabia.

In addition to its administrative and military functions, Hofuf had also the greatest commercial importance, both in the Oasis and in the rest of eastern Arabia. It was considered, in the words of Lorimer as "an entrepôt of the foreign trade of Najd [Central Arabia]".[13] Manufacturing undoubtedly developed early, but there are no estimates of the town's population during the Turkish period.

In 1670 AD the Bani Khalid dynasty took over Al-Hasa Oasis from the Turkish Government and used Mubarraz as the capital of their state.[14] It was only then that the position of Hofuf was seriously challenged by the removal of the capital from Hofuf to Mubarraz. Although the growth of Hofuf continued under the impetus of its well established trade, it was now much slower.

As a seat of government for the Bani Khalid dynasty Mubarraz became a garrison town with several fortifications, while a powerful governorship and commercial functions developed, no doubt to service the new government of Bani Khalid. From Mubarraz the Bani Khalid dynasty controlled most of eastern and central Arabia. Thus Mubarraz with its new political functions flourished, while Hofuf suffered a setback to its former importance, though it continued to fulfil many of its commercial and religious functions. This acquisition of administrative functions was very important for the growth of Mubarraz, since its traditional occupations were restricted, and most of its trade was of a transit nature. Consequently, when the power of the Bani Khalid State diminished in 1790, Mubarraz suffered a major setback in its growth.

In 1790 AD the Al Sa'ud dynasty established themselves in Al-Hasa Oasis and put an end to the state of Bani Khalid which had governed the Oasis from Mubarraz for almost 120 years.[15] When they set up their regional capital at Hofuf, it regained the political function it had in the

sixteenth century, which had been lost to Mubarraz in the seventeenth and eighteenth centuries under the Bani Khalid dynasty. This political function, with the traditional commercial function, had no doubt enhanced the growth of the town. At the same time Mubarraz, having been stripped of its previous function as a capital, stagnated and later started to decline.

Some reasons may be advanced to explain the choice of Hofuf as a regional capital for eastern Arabia. The traditional Al Sa'ud headquarters were ad-Dar'iyah, near ar-Riyadh, which was too remote once eastern Arabia fell into Al Sa'ud hands. Thus Hofuf was probably chosen because of its favourable position not too far away from the tribal lands from which the Al Sa'ud drew much-needed support. Another consideration was the need of the Al Sa'ud of a strategic position from which they could keep an eye on the movement of their enemy (the Turks and the Bani Khalid) who were eager to recapture Al-Hasa Oasis from them. A centre, strategically placed to meet these requirements, was needed, and yet one also secure and easy to defend. Hofuf with its strong fortifications and walls, which were built by the Turks some time in the sixteenth century, appeared to fulfil these requirements. Furthermore, it was an established town, although of no great size, with growing commerce. Its position on the main route between the Gulf and central Arabia allowed Hofuf to act as intermediary and market in the trade between the two areas, and there were fertile and well-watered agricultural areas nearby with surplus products.

Besides these advantages, Hofuf was favoured also by its hygienic position outside the date gardens of the Oasis. In and around Al-Hasa Oasis there were and still are salt marshes, whose stagnant waters bred 'noxious miasmas' from which diseases, notably malaria, were supposed to come. Hofuf is located on high ground in the south-western corner of the Oasis, far from these disease-bearing marshes. Another great advantage of Hofuf is the existence of a good supply of fresh water, from springs as well as

wells (Chapter 3). The water supply has always been considered a major factor in the expansion of Hofuf. The only disadvantage of Hofuf is its exposure to the 'Somoom' wind (southerly hot winds) which has been discussed in the physical part of this thesis. Mubarraz cannot match Hofuf in these advantages. Moreover, it has a lot of disadvantages. It was the capital of Bani Khalid dynasty (the Al Sa'ud's enemy) and consequently the loyalty of the inhabitants might be in doubt. It had no commercial advantages, was not easily defended and was smaller in size.

In 1799, J.L.Reinud, a British resident at Basra saw Hofuf for the first time since the change of ruling power when he was on his way to ad-Dar'iyah (the former Saudi capital), but he dismissed it, according to Hogarth,[16] in a few words. He made remarks on its small size, but he thought ad-Dar'iyah small too. We do not know his standard of size. The area was also poorly reflected in the account of Sadlier.[17] His account of both towns gives the impression that Hofuf and Mubarraz were typically Arabian towns, reflecting in their physical features the state of war and insecurity which prevailed in that area during the nineteenth century. Both towns were at that time surrounded by mud walls, with two gates for Hofuf and one gate for Mubarraz. Each town was encircled by a dry ditch. It was believed that these ditches were used as an added defensive obstacle before the attackers could reach the town wall. To the east of each town was an open village interspersed with cultivated gardens and date plantations.

Hofuf and its suburbs, according to Sadlier,[18] "do not contain fifteen thousand inhabitants", whilst Mubarraz "may contain about ten thousand souls". Thus in the early part of the nineteenth century Hofuf was bigger in size and population than Mubarraz, which had lost its former importance of the seventeenth and eighteenth centuries to Hofuf. Although Sadlier did not think that the status of Mubarraz was inferior to Hofuf,

it seems that the decline of this town had continued since the disappearance of the Bani Khalid state in 1790 and the consequent removal of the capital from Mubarraz to Hofuf town. This date indeed marked the beginning of a period of strong growth for Hofuf, and at the same time a period of retarded growth, if not stagnation, for Mubarraz. This state of affairs is clearly reflected in the accounts of all the travellers who visited the area in the nineteenth and early twentieth centuries. For instance, when Palgrave[19] visited the Oasis in 1862-3, he chose to stay at Hofuf because it was the capital of eastern Arabia and the most convenient urban centre in that area. Consequently he concentrated in his account on Hofuf more than he did on Mubarraz, as did all the travellers who came after him.

During this visit, Palgrave[20] found that Hofuf had grown and expanded outside its walls towards the east, and had absorbed the open village, previously mentioned by Sadlier,[21] which now formed the "Rifa'ah [ar-Rif'ah] quarter". The town had also expanded outside its borders towards the south to form another quarter called "Na'athil [an-Na'athil] quarter". These two quarters must have been newly built-up areas created only after Sadlier's visit of 1819, for Palgrave is the first writer to mention them. According to Palgrave's account[22] of his visit in 1862-63, both these two new quarters, and especially the an'Na'athil quarter, contained not only residential areas but also many plots of date garden.

Thus, by 1862, two Hofufs had begun to appear. In the east and in the south were the ar-Rif'ah and an-Na'athil quarters, or the new Hofuf, and in the north-west was al-Kut quarter, or the old Hofuf. Palgrave praised ar-Rif'ah as a noble and "very healthy quarter". It contained "handsome dwellings"with elegant architecture. The streets were wide and very clean, despite its being in a hot country.[23] This fact was also reported by Cheeseman.[24] When comparing ar-Rif'ah with quarters in

Damascus and Beirut, Palgrave exclaims that ar-Rif'ah is "so well kept", and he adds of an-Na'athil (the second part of new Hofuf), "in it every description of building is to be seen - for rich and poor, for high and low, palace or hovel,"[25] though Philby called it the "slum quarter".[26]

The old Hofuf, or al-Kut quarter, was completely surrounded by "walls and towers of unusual height and thickness". Its towers were about twenty metres in elevation from the bottom of the outer ditch, which also encircled this quarter.[27] The walls and ditch were probably the ones that had surrounded Hofuf before its expansion, and which had been described by Sadlier[28] in 1819. The al-Kut quarter, or the Old Hofuf, was reported by Palgrave in 1862-3 to be a city within a city, and by far the most densely inhabited quarter in Hofuf.[29] In this quarter resided the governor and other governmental officials.

These three quarters, the old and new, were grouped round a central space which separated them. Because of its centrality, this space started to attract the commercial activities of Old Hofuf (the al-Kut quarter). By Palgrave's visit of 1862-3, the commercial activities of the al-Kut quarter (Old Hofuf) had already been shifted to this central areas. He states that the Qaisariyah, or bazaar, of Hofuf was located in the north-eastern part of this area, next to the ar-Rif'ah quarter. Around it clustered several alleys, roofed with palm leaves against the heat, and tolerably symmetrical. The merchandise of the shops had long been praised by all the travellers who visited the area, for it included different varieties of local and foreign products.[30] This clearly indicates that Mackie[31] and Vidal[32] were mistaken in suggesting much later that the Qaisariyah or bazaar of Hofuf was then newly built. It had been in existence for many years by the time they visited Hofuf.

According to Palgrave[33], other parts of the central space were used in his day for holding public auctions. By the time of Philby's visit[34],

of 1917, some of these auctions had developed into a regular weekly market. The Thursday Market used to be held in the area located immediately to the east of al-Kut wall, that is in the northern part of the central areas. Thus this area, which had once lain outside the walls of Old Hofuf had come to occupy the heart of the town by the 1920's and was its busiest area, as numerous travellers reported (Philby,[35] Cheeseman,[36] and Rihani[37].)

in 1871, the Oasis was re-occupied again for the second time by the Ottoman Empire, and Hofuf continued to serve as a capital for eastern Arabia. After this political change, the Ottoman government maintained a state of siege in the Oasis and were increasingly reluctant as reported by Hogarth[38] to admit Europeans into it. Zwemer,[39] in 1897, was the only European to see the area after the Turkish Occupation of 1871. He was not allowed to leave the Oasis before signing a paper disclaiming all responsibility on the part of the government, should he come to lose life, limb, or luggage!!! Surprisingly, he found that Palgrave's plan of Hofuf, which had been drawn 30 years before, was completely accurate. The gardens reported by Palgrave inside the town walls were still in existence.[40] This fact indicates that pressure on land inside the town walls cannot have been too great prior to the Turkish Occupation. However, subsequent insecurity forced the inhabitants to build their homes close to each other to ensure safety and security. In order to accommodate the population increases within the town walls, they probably tended to exploit every available space inside the built-up area without enlarging the town outside its limit. In fact, the town boundaries reported by Palgrave[41] in 1862 were the same at the time of Zwemer's visit[42] in 1897, and it was not until 1922 that Hofuf was reported for the first time by Philby[43] to have grown outside its walls. He states that "Salihiyya [as-Salihiyah] suburb, lying outside the wall of the south-eastern portion of

the town, is of comparatively recent growth". It was originally a fort erected by the Turks for the protection of the city on that side, and was mostly occupied by Turkish officials and their families when sufficient suitable accommodation was unavailable in the congested al-Kut quarter.

Although as-Salihiyah fort was originally built for military purposes,[44] it attracted some other inhabitants apart from the officials, since it provided them with the security whose lack had long prevented habitation outside the town walls. Since security was the main purpose of the walled towns of Arabia, it is assumed that the growth of as-Salihiyah surburb only became noticeable after King Abdul Aziz drove the Turks out of Al-Hasa Oasis in 1913, whereupon it once again became safe to build houses outside the fortifications. Under the strong governorship of Ibn Jlewy, peace prevailed in the area, and the old security measures were relaxed.[45] The relaxation of security measures was already evident in the decayed wall and fortifications reported by Philby.[46]

After the recapture of Al-Hasa Oasis by King Abdul Aziz in 1913, Hofuf town continued to serve as an administrative capital for eastern Arabia, as it had done in the Turkish period. The function, which Hofuf had retained since 1790 despite the changing governments of the Oasis, no doubt encouraged the growth of the town both inside and outside its walls.

Thus the town of Hofuf, which had contained two gates at the time of Sadlier's visit[47] of 1819, was reported to have six gates when Palgrave[48] visited it in 1862-3. In 1917 Philby reported that the town had spread outside its walls, which had been allowed to decay.[49]

Information on the historical development of Mubarraz, however, is lacking, probably, because the town was overshadowed by the strong commercial and political position of Hofuf which it continued to retain from 1790 till 1953 when these functions were finally removed to the new

oil centre of Dammam. Nevertheless it was likely that what was happening in Hofuf appeared to happen also in Mubarraz but on a smaller scale.

It seems that the acquisition of new functions leads to growth, while removal can reduce the size, population and wealth of towns. Hofuf, however, with its variety of functions, could fall back on its well-developed commerce, which allowed it continuity of growth during the seventeenth and eighteenth centuries.

Commerce and administration no doubt continued to play a large part in the development of the towns in the Oasis. The former is cumulative given the right conditions, whereas the latter depends on subjective political decisions. As shown, Hofuf was well placed as a centre of commerce, being a collecting point for the agricultural products of Al-Hasa Oasis. Hofuf's commercial activities, supported by its administrative functions, were enhanced by the first Turkish invasion of the sixteenth century AD, and some of the wealth of Turkish building which exemplified this prosperity has survived to the present day. Hofuf, under the successive governments of the first Saudi Conquest (1790-1816), the Egyptian Occupation (1816-1828), the second Saudi Regime (1828-1871), then the Turkish Occupation (1871-1913) and finally the third Saudi Conquest of 1913, became an administrative centre for most of eastern Arabia, but only under progressive governors was there a positive effect on the town's growth.

Subsequent frequent attacks upon Hofuf, Mubarraz and other settlements of the Oasis are, clearly, an indication of the wealth and strategic importance of Al-Hasa Oasis.

9.2 Urban Structure and the Traditional Morphology

The most important urban structures in Hofuf and Mubarraz were actually embodied in their functions, discussed above, which they acquired through their history. Political administration found expressions

in the palace or governor's residence and the court; trade in the bazaar; defence in the town wall, the citadel and other fortifications, and religion and education in the Friday mosque and madrasahs.

Descriptions of these buildings by early writers are vague and sometimes incomplete as will be seen below. Some of them have not even been mentioned by name though there are indications of their existence. The administrative function was represented by the palace of the governor which existed in the old fortified quarter (al-Kut) of Hofuf until 1972, when it was pulled down to make way for the new expansion of the town. It is well known that Hofuf was the residence of the provincial Governor General of the first Turkish Occupation of 1555 AD and the administrative Governor of the late Al Saud State.

The court was another aspect of Hofuf's administrative function. Mandeville reported that in the early documents of the sixteenth century AD, the Ottoman Province of Al-Hasa (eastern Arabia) had an appointed Provincial judge resident at Lahsa (Hofuf) who was aided by district judges.[50] It is still not known exactly where the court was located in Hofuf but since al-Kut was the only fortified and strongly defended quarter within the town, it is likely that the court was also located there. In fact in this quarter resided not only the governor and his deputies but also all the officials and the wealthy people of the town possibly for better protection against external attacks or internal uprisings.

Unfortunately, there is little information on the existence of such buildings in Mubarraz. But, since Mubarraz town had also served, between 1670 and 1790 AD, as seat of government for the Bani Khalid State which dominated most of eastern Arabia, then it can be presumed that Mubarraz must also have had various buildings at that time from which the government could govern and administer its dominion and in which the ruling elite and their families could live.

The so-called Friday mosque (congregational mosque) is a common feature of all Islamic towns, in which Muslims assemble on Friday each week for prayers. Early writers recorded the existence of Friday mosques in Hofuf and Mubarraz. The earliest Friday mosque for which there is evidence was built in 963 AH (1555 AD) by Sultan Sulaiman Salem Pacha after the Ottoman Empire occupied Al-Hasa Province. It was called Masjid-ad-Dibs, and it still exists in the al-Kut quarter of Hofuf. Another Friday mosque called Masjid-al-Qubbah* (the mosque of the dome) was built also in the al-Kut quarter in 974 AH (1566 AD as indicated by - al-Abdal-Qadir).[51] This mosque is mostly mentioned in the literature as the mosque of Ibrahim Pacha. While some authorities, for example the Admiralty War Staff,[52] attribute its construction to the Egyptian military head of the Turkish army when it occupied Al-Hasa in the last century, others, for example Philby[53] and Rihani[54] believe that the mosque was built at the time of the first Turkish Occupation in the sixteenth century AD. However, since the Admiralty War Staff was mostly concerned with the collection of military information, they were probably not very interested in when Masjid-al-Qubbah or Ibrahim Pacha was built, for such information would serve no military purpose. Therefore, it is likely that both Philby and Rihani, who actually visited and stayed in Hofuf for some time, were probably much more accurate on this historical point than the Admiralty War Staff. Indeed, the view of Philby and Rihani has also been shared by the local historian, al-Abdal-Qadir.[55]

The large dome and the tall minaret of Masjid-al-Qubbah or Masjid Ibrahim Pacha are the most striking architectural features dominating the skyline of Hofuf. This mosque can be seen from any direction when approaching the town. Philby described it as "the most beautiful building

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* This mosque was photographed in 1917 by Philby. Plate opposite p.30 in Philby,H.St.J.B.,Vol.1 (1922).

in all central and eastern Arabia".[56] In Mubarraz, however, reference to a Friday mosque does not appear before 1081 AH (1670 AD), although one might have been expected even before this date if the mosque was of appreciable size.

Other religious and educational institutions, such as Madaris (pl. of Madrasah or school) al-Wa'dh or preaching and guidance schools, had also existed in various parts of both Hofuf and Mubarraz. Al-Abdal-Qadir reported that there were eight Madaris in Hofuf and ten in Mubarraz.[57] Unfortunately, there is no information on their exact locations or their buildings. However, the most important of them is Madrasat ash-Shafi'y which is still functioning as a religious centre for practising and reciting the Koran and the traditional sayings of the prophet Muhammad. This Madrasah which was built in 1019 AH (1601 AD) in Hofuf, west of the Emirate Palace, consists of a relatively large building and a beautiful dome (Appendix A).

Some hostels to accommodate students coming from outside Al-Hasa Oasis still exist in some parts of the old Hofuf though they have nowadays lost their traditional function. The author saw one of these hostels in al-Kut quarter during the study trip of 1972, but it was empty, locked and had been out of use for several years. During Zwemer's visit of 1897 he reported the existence of a military hospital in al-Kut quarter of Hofuf.[58] But this hospital had been moved in the mid-thirties to ar-Rif'ah quarter in a building erected in the early 1920s by al-Qusaibi trading family.[59]

The administrative, religious and educational buildings just mentioned, occupied the core of the old towns of Hofuf and Mubarraz. Next to them came the commercial district which was located immediately outside the wall of al-Kut quarter in the centre of Hofuf not far from the main Friday mosque. The commercial district of Mubarraz also occupied

the centre of the town nearer to the southern wall than to the northern one. Unlike Mubarraz, Hofuf had a considerable volume of trade and as early as 1865 Palgrave praised its caravanserais.[60] It was reported that the brother of "Mehemed Pasa" or Muhammad Pacha, the Turkish Governor of Al-Hasa, endowed Hofuf in 959 AH (1551 AD) with 110 shops as waqf (endowment) for the upkeep of schools, mosques and other institutions.[61] They were probably built around Suq al-Khamijs (Thursday Market) or in al-Kut quarter (Old Hofuf). The commercial district of Hofuf was alinear. It did not exhibit the concentric hierarchy of craft and trades found in other bazaars in Middle Eastern cities which has been discussed in Chapter 3. Neither Hofuf nor Mubarraz had lanes for selling or binding books, which were a common feature in the markets of Middle Eastern cities. The Hammam or the public bath was also absent from the market areas of both towns. This is perhaps because many people in Hofuf preferred to bathe in the 'Ain Umm al-Khuraisan in the gardens only 402 metres to the north of the town near Mubarraz road, and 'Ain Fuhairiyah about the same distance to the east of the town. Of these springs the former was the most used. Similarly, the people of Mubarraz bathed in 'Ain al-Harrah (the hot spring) which was also about the same distance from Mubarraz as the above mentioned springs were from Hofuf town. Both sexes in Hofuf and Mubarraz bathed in these springs.[62]

The permanent shops in the commercial zone of Hofuf were mostly concentrated along the Market Street which extended from Dirwazat al-Khamys* in the north to Suq al-Qasasib in the south (Fig 9.2). The main permanent shops were mostly grouped in the covered market of al-Qaisariyyah on the eastern side of the Market Street. al-Qaisariyyah is quasi-rectangular in shape, consisting of single storey buildings with several narrow lanes, and arcades along the main street. Each

*It also is called Bab al-Mubarraz for it leads to Mubarraz town.

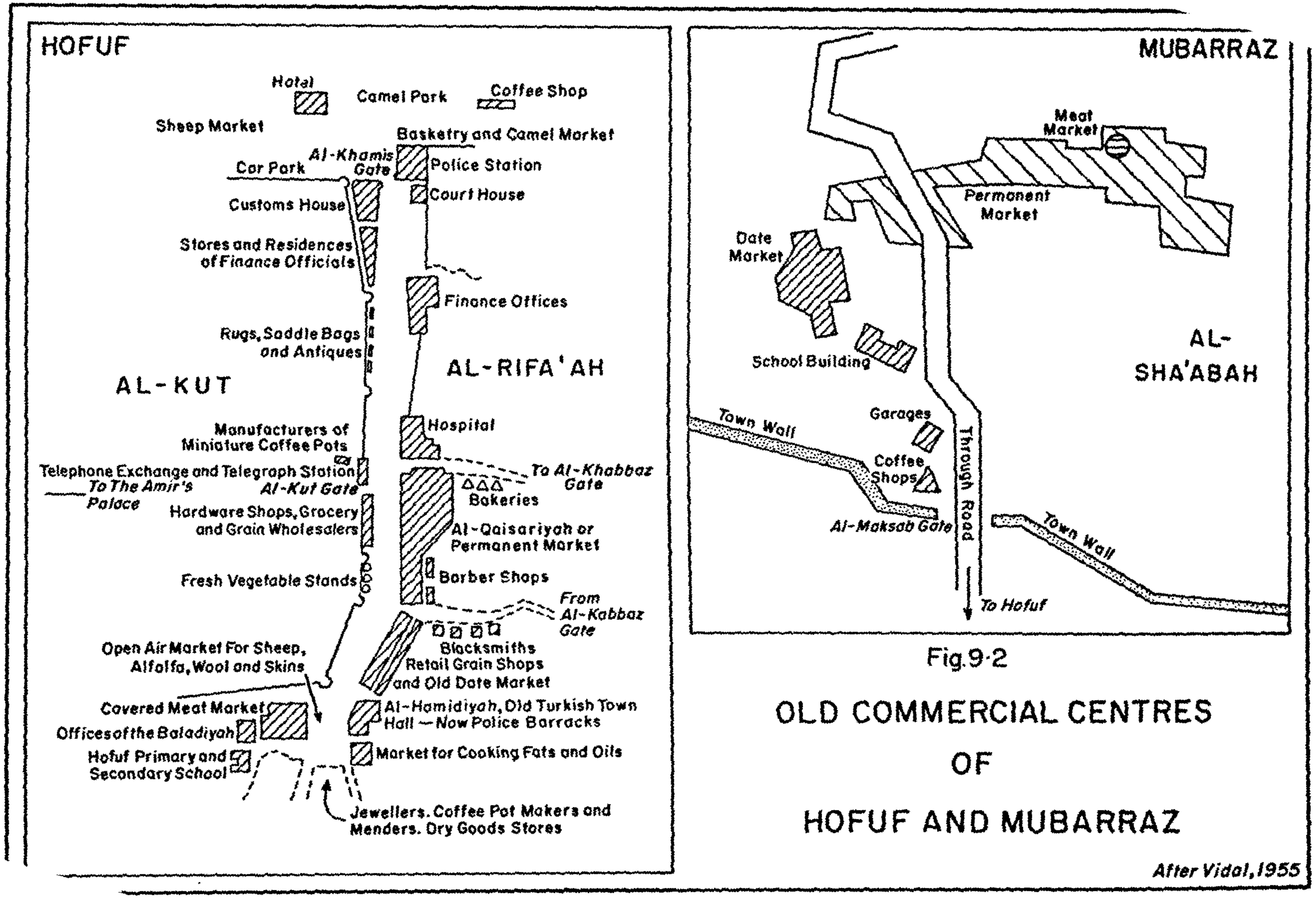

Fig.9-2

OLD COMMERCIAL CENTRES OF HOFUF AND MUBARRAZ

After Vidal, 1955

lane in this covered market contains several small shops. The shops on the front of this market sell dry household goods while the two parallel streets sell cloth. The southern side of this market is occupied by bishts (cloaks) traders, rug and bedding along the northern and eastern sides and metal vessels and antiques in the centre.[63] Unlike other al-Qaisariyyahs in the Middle East, the al-Qaisariyyah of Hofuf has no residence apartments above its shops; it is completely reserved for trade.

It is not known exactly when the modernization of al-Qaisariyyah market took place, although a comparison between the two photographs (Plate 9.1) taken in 1917 and 1923* indicates that it happened some time between these two dates.[64]

Immediately to the south of al-Qaisariyyah were found the retail grain shops on the main street, and then the market for cooking fat and oil.

On the other side of the Market Street and opposite al-Qaisariyyah were located the hardware shops, grocery and grain wholesalers. To the south of these shops was the meat market, and rugs, saddle bags and antiques were located to the north along the front of the Market Street. The jewellers, silversmiths and goldsmiths shops, the coffee pot makers and menders and dry goods stores were found at the southern end of the Market Street along both sides of al-Mufairiq Street. The coffee shops, basketry shops, the camel market and the sheep market were situated at the northern end of the Market Street outside the town wall. The barber shops occupied a small lane behind the al-Qaisariyyah. Then came the bakeries and the blacksmiths shops. Each one of these pursuits occupied a separate lane outside the main commercial area but close to its eastern side. Thus it seems that the noisy and smelly pursuits such as metal working occupied the furthest end of the commercial district, while those crafts of

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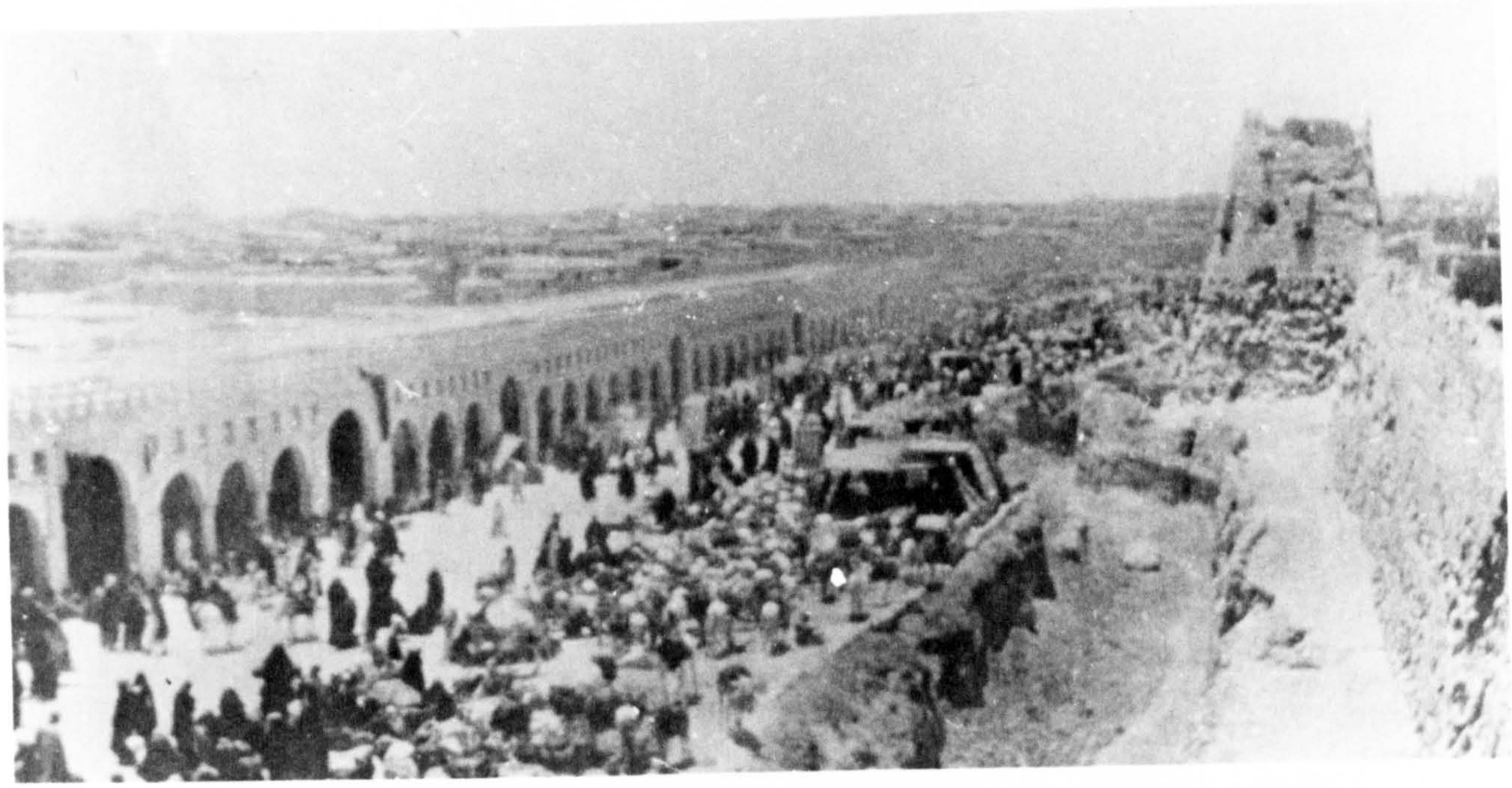
* This photograph was actually taken by Cheesman during his visit to the Oasis. But for clarity in the comparison the Rihani photograph has been used instead of Cheesman's.

(Philby,1922)

Plate 9.1 Two photographs showing that the modernisation of As-Suq Street (Market Street) took place between 1917 and 1923

(Rihani,1928)



interest to countrymen and Bedouins were found outside the main commercial area near the town gates or outside the wall. In this respect the commercial district of Hofuf exhibited some similarity in its features with other markets in Middle Eastern cities, though not completely.

Within the Market Street there were some areas reserved for selling fresh vegetables, alfalfa, wool and skins in the open air. It is a custom very common in Al-Hasa Oasis to fix certain days of the week for holding public fairs in different localities. Some fairs, such as Suk Ukadh and Suq San'a, have been held in Arabia since the earliest days, long before the advent of Islam. The weekly fair of Hofuf is held on Thursday, and that of Mubarraz on Wednesday. On Thursday every week the Market Street in Hofuf was crowded with thousands of people not only from Hofuf itself but also from the different parts of the Oasis and the surrounding desert. People used to bring their products to the Market Street to be sold by bargain. Then they would buy what they needed before they returned to their areas.[65] The Thursday Market was,in fact, the biggest periodic market held in Al-Hasa Oasis.

Thus the commercial district of Hofuf was not only the geographical centre of Hofuf but also the social and economic focus of the town. People from the different social classes of the town, the villagers and the Bedouins, meet each other in the market, exchange different products, ideas and gossip, and then returned to their areas with news. There were also many public services in the commercial district of the town, such as the court, the custom houses, the financial offices, the hospital, the Town Hall and a primary and secondary school as well as the Baladiyyah or the Municipality (see Fig 9.2). These establishments emphasized further the importance of the commercial area as a civic centre for the whole town.

In the case of Mubarraz, the commercial district was also found

near the town centre. It consisted of permanent shops as well as temporary ones. As in Hofuf the permanent shops were also concentrated in a covered market called al-Qaisariyyah. It was located at the centre of the market area between the meat market and the date market (see Figure 9.2.) The al-Qaisariyyah of Mubarraz consisted of a maze of narrow arcades and exhibited almost the same features as those of Hofuf described above, but without the elegance of the arched and colonnaded front. The shops were smaller and specialization was not as marked as in Hofuf. The date market, which was located to the southwest of al-Qaisariyyah, was also smaller than the one in Hofuf. As its name indicates, it roughly specialized in selling dates from small shops in the market itself. In the meat market (north of al-Qaisariyyah) vegetables were sold as well as meat. Besides these main features in the commercial area of Mubarraz, there were individual shops in various places in the market area selling a variety of goods, mostly local products such as basketwork, coffee pots, bisht (cloaks), robes etc. The weekly market, which was usually held on Wednesday was concentrated near Dirwazat al-Maksab and in the square near the meat market, but it was less important than the Thursday Market of Hofuf. There was, however, no marked difference in the quality and variety of goods displayed.[66] Indeed, when Mackie visited the town in 1924 he described the commercial area of the town as possessing "only a small poorly stocked bazaar, in which only the bare necessities of life are to be found".[67]

The remainder of both towns of Hofuf and Mubarraz were subdivided into various residential quarters grouped around the market area. Thus Hofuf was divided into six quarters: al-Kut, an-Na'athil, ar-Rif'ah ash-Shamaliyah, ar-Rif'ah al-wusta, ar-Rif'ah al-Janubiyah, and as-Salihiyah. The latter quarter is a new development, coming into existence only in the early years of this century, as has been stated early in

this chapter. This quarter was located outside the town wall in the eastern part of the town. Similarly Mubarraz had also six residential quarters: al-Utban, as-Siyasib, ash-Sha'abah, al-Muqabil, al-Qudaimat and al-Uyuni which was located in the heart of the towns (see Figs.9.3 and 9.4). The residential districts of both towns had many characteristics found in other Middle Eastern towns of the eighteenth and nineteenth centuries, as stated in Chapter 3. The residential pattern in Hofuf and Mubarraz towns was based on the social segregation of the various groups of inhabitants, as is common in the Islamic towns of the Middle East. The divisions of the towns of the Oasis into quarters was also based on ethnic or religious application, or occupation. The followers of the Shii'a sect* resided usually in the three quarters of ar-Rif'ah of Hofuf which occupy the eastern part of the town. The Sunna resided in the other three quarters of al-Kut, an-Na'athil and as-Salihiyah. In Mubarraz town the Shii'a were concentrated largely in ash-Sha'abah, al-Muqabil, al-Qudaimat and part of al-Uuni quarters which formed the eastern part of the town. The other two quarters were mostly occupied by the Sunna followers.[68] It is interesting to note that most of the eastern parts of both Hofuf and Mubarraz towns which face the Oasis were usually occupied by the Shii'a followers, while the western parts of these towns were the traditional residential areas of the Sunna. The fact is that the Shii'a are the original inhabitants of the Oasis who probably preferred to reside in those parts of the towns which were near to their properties in the area and as far as possible from the open desert, the home of their traditional enemy, the Bedouins. The newcomers to the Oasis resided in the parts of the towns facing the desert probably because of their strong connections with the desert, their original home. Sectarian conflict between the two communities might also have influenced the

*Shii'a and Sunna are the two major division of Islam comparable to Protestant and Catholic in Christianity

choice of their residence, so that each group chose to reside in the parts of the towns near the areas from which they could get support in time of need.

However, it must be emphasised that there was no strict segregation between the two communities living in the various quarters of Hofuf and Mubarraz towns: there was some overlapping between their residential areas. That is to say a few of the Shii'a resided in the Sunna quarters and, some of the Sunna were settled in the Shii'a quarters.

Similarly, there were no physical divisions between the quarters of Hofuf and Mubarraz. The only exception to this pattern was al-Kut quarter which, according to Mackie, was indeed separated from the other quarters of Hofuf by "a stone wall with stout bastions at intervals of about 150 yeards, and a moat which...was meant to be merely an extra obstacle to attackers from without".[68] Communication between this quarter and the rest of the town was through a well fortified gateway located in the eastern wall of this quarter. On the top of this gateway there was a room which commanded a view of the whole town. The gateway opened immediately into the commercial district of Hofuf which occupied the area outside the eastern wall of al-Kut quarter.*

It appeared that this quarter was physically separated from the rest of Hofuf town because it contained the palaces of the governor and his deputies and the guest house for the official visitors. The government high officials worked and resided in this quarter, which also contained the citadel. This had a terrace, 25 feet from the ground, with loopholes for five muskets and some ten to twelve antediluvian pieces of cannon which, some of them mounted on carriages but most of them not, protruded threateningly but innocuously through their own special loopholes.[69] According to Philby, al-Kut quarter "constituted...a self

*An aerial view of the eastern and southern wall of al-Kut quarter can be seen on Plate 20. See also Rihani Photograph opposite p.100

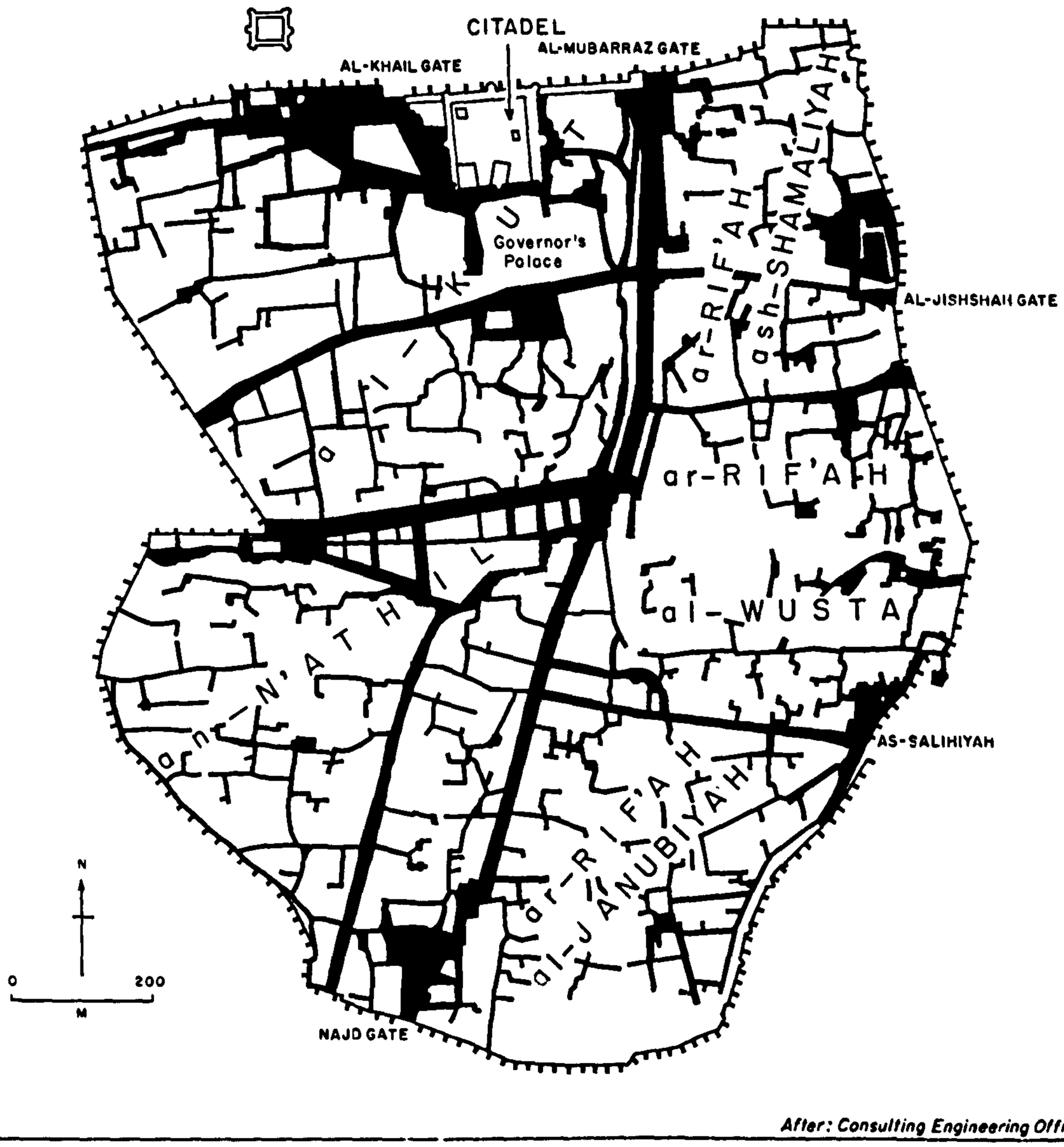
contained unit complete in all essentials, with access to the outside by the northern gate and to the rest of the city by a gate of massive dimensions in the wall aligning the Suq al-Khamis".[70]

Some of the quarters in both towns were also subdivided into smaller districts often known only to the inhabitants of the quarter itself. The inhabitants of the other quarters might not know all of these subdivisions. Each of these subdivisions consisted of a cluster of houses and was called a Fariq. It seems that the division of each quarter into Fariqs was based on ethnic affiliation, occupation or on geographical location. This suggestion is based largely on inquiries made in both Hofuf and Mubarraz towns during a study trip to the Oasis during September 1975. Some of the Fariqs derived their names from an important family who resided there, such as Fariq al-Milhan, Fariq al-Qusaibi and Fariq al-Muhanna in the quarter of an-Na'athil of Hofuf. Some of the other Fariqs were also named after certain professions such as Fariq al-Hadahid (Blacksmiths), Fariq as-Safâfir (coppersmiths) in ar-Rif'ah and Fariq an-Najajir (carpenters) in al-Kut. Others were also called after the direction in which the Fariq was located or to which it led, such as Fariq ash-Shimali (the north) or Fariq al-Mufairiq (a street name).[71]

Unlike the other Islamic towns of the Middle East and North Africa, the towns of Saudi Arabia had no Jewish communities at all. Consequently there were no Jewish quarters in the towns of Al-Hasa Oasis. Except for broad avenues in Hofuf and only one in Mubarraz, the streets and lanes in the residential quarters in both towns formed a maze of twisting passageways, alleys and cul-de-sacs., (Figs. 9.3 and 9.4). Observations throughout the old quarters of the towns of the Oasis showed that most of these narrow and crooked streets were only just wide enough to allow two laden donkeys to pass each other (Plate 9.2).

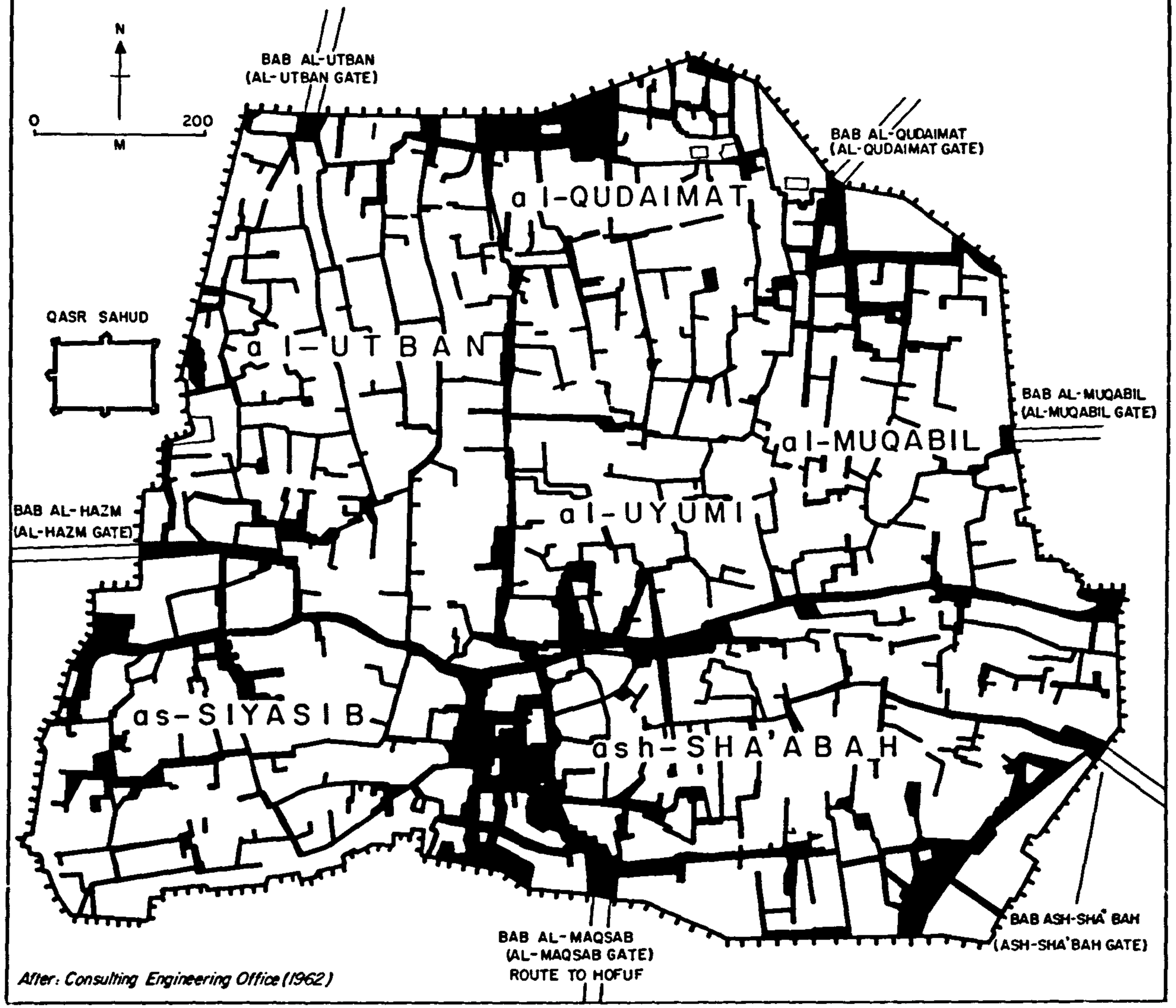
Apart from these twisting streets which extended irregularly

Fig. 9·3 OLD QUARTERS AND GATES OF HOFUF



After: Consulting Engineering Office (1962)

Fig. 9·4 OLD QUARTERS AND GATES OF MUBARRAZ



After: Consulting Engineering Office (1962)

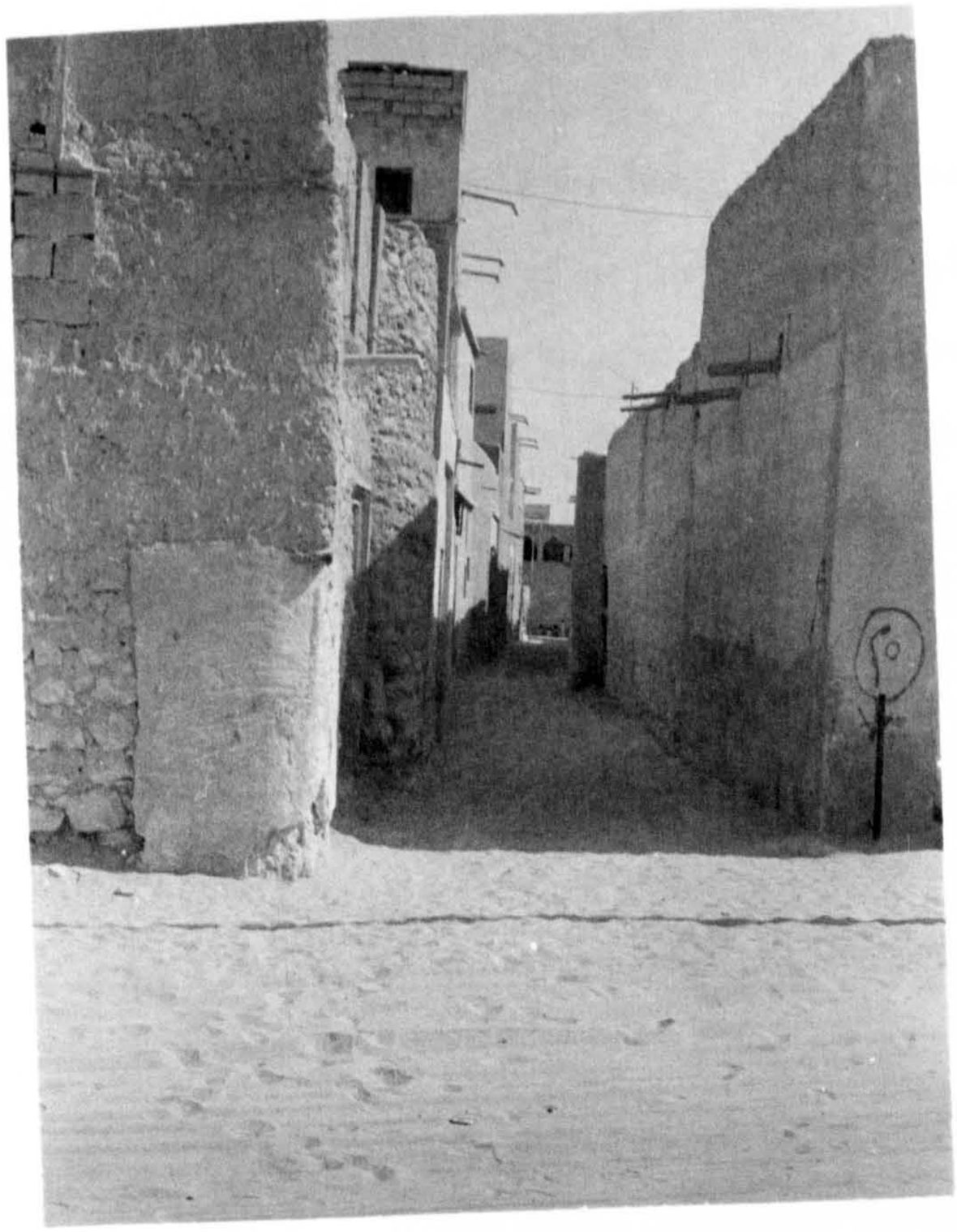
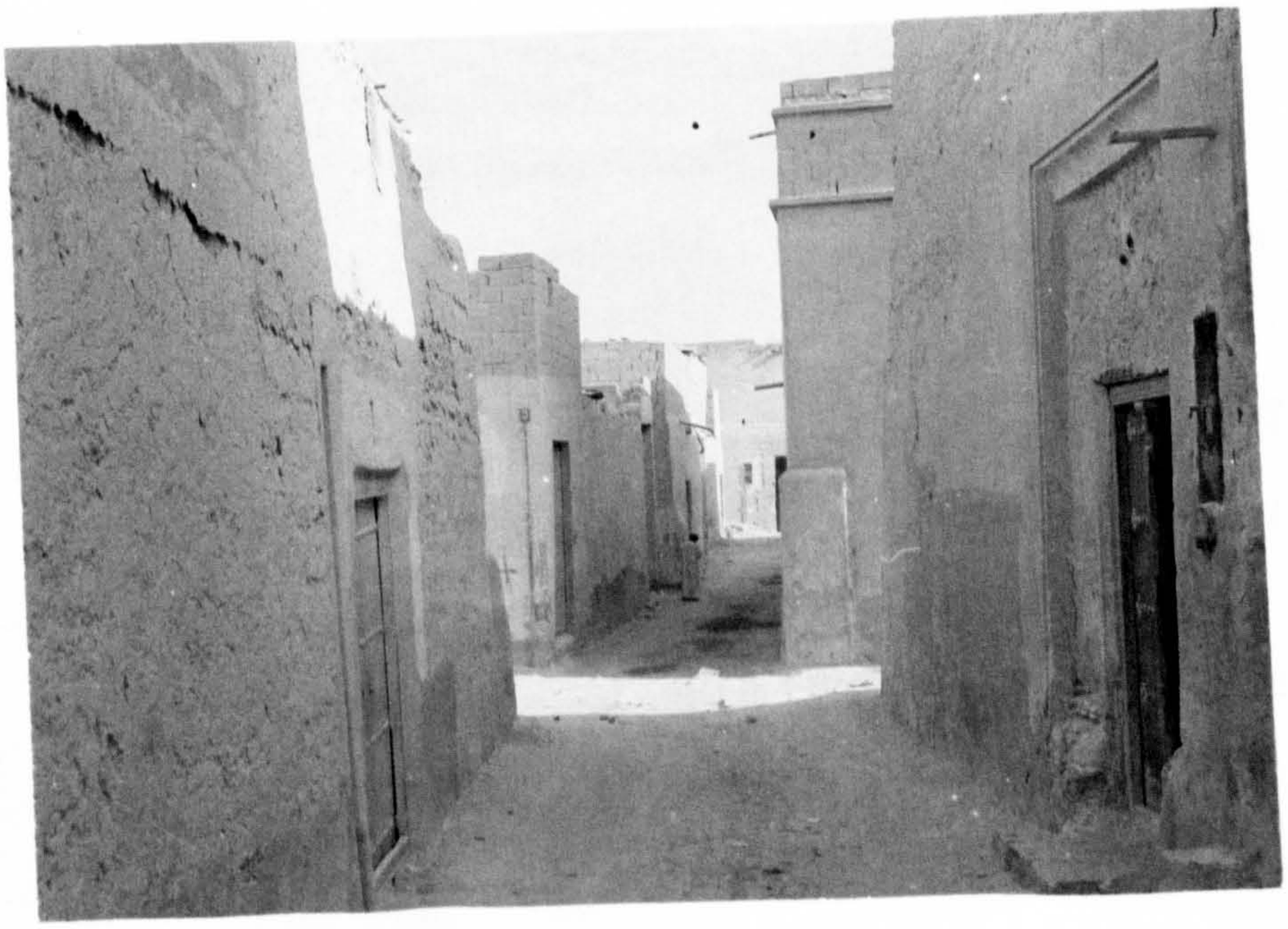


Plate 9.2 Two views of some streets in old towns



throughout the residential areas, the bulk of the quarters were occupied mostly by household compounds. A number of neighbourhood crafts and trades. which escaped localization in the bazaar were also found there along with small mosques, wells or 'Ains (springs). Among these shops scattered throughout the residential areas of the two towns were bakers, vegetable dealers, small grocery shops and carpenters. Mosques and the small shops of these traders and crafts used to occupy small squares at the intersection of lanes.

It is not known exactly how this maze of alleys came into being in the two towns of Al-Hasa Oasis. But since this is a common feature in all Islamic towns of the nineteenth century in the Middle East, there must be common reasons for the adoption of such streets, not only in the towns of the Oasis, but also in the other towns in the Middle East. Some of the possible reasons which combined to create such streets not only in Hofuf and Mubarraz, but also in other similar towns in the Middle East are as follows:

(1) Islam, according to de Planhol, "has never conceived the street as a passageway for vehicles; at most it is for beasts of burden". The prophet Muhammad prescribed, as is mentioned earlier in Chapter 3, a minimum of 7 cubits (about 3.1 metres) as the width of street. This space would roughly, permit the passing of two heavily laden animals.[72]

(2) Islamic law was vague about encroachment on the public way. Religious condemnation of all encroachments on the public way is subject to important modifications. One can simply possess property by occupying it for a period of time estimated at sixty years, according to the Malikite School. Each householder had rights extending to the immediate vicinity of his dwelling, as defined in the law of Harim. Consequently, newly constructed walls were allowed to encroach unhindered upon the lanes or streets thus narrowing farther the right of way.[73]

(3) Till the late nineteenth century there was no municipal organization in Islamic cities of the Middle East* and thus there was no council with overall responsibility for town management. Occasionally, the town governor appointed a local sheikh or Umdah for the purpose of raising taxes, maintaining order and representing the quarter. The traders and the professionals organized their own affairs through the so-called "Guild system"** described earlier in Part One.

Thus the Islamic town of the Middle East especially in Saudi Arabia was unplanned, and individualism played an important part.[74] The towns of Al-Hasa Oasis were no exception to this, and in Hofuf and Mubarraz there is no record of any planning before 1962. It seems that each householder planned his own house simply by the rule of thumb. Most of the houses were also erected by their owners who lived and worked in them. But the alleys of the old Hofuf and Mubarraz created by the space remaining after buildings were put up were left without any one to care for them. Evidence of this can be seen in the street pattern of the older sections of Hofuf and Mubarraz, illustrated on Figures 9.3 & 9.4).

(4) In a hot climate such as that of Saudi Arabia, and in particular Al-Hasa Oasis, with clear sky and a temperature of over 42°C during summer days, dealt with in the considerations of the area's climate in Chapter 6, the pedestrian needed to be protected against the direct heat of the sun. Consequently, the twisting narrow lanes of Hofuf and Mubarraz, and indeed similar lanes in other Middle Eastern towns had also a climatic reason; such streets provided shade for pedestrians all day long, and they also helped to stop the sand storms which are common in these areas, from penetrating the residential areas of these towns.

(5) The security problems, which existed in Al-Hasa Oasis till

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*The Municipal Office or the Baladiyah was only introduced in Al-Hasa Oasis during the early 1930s.

**This system still exists in some towns in Saudi Arabia such as Medina, Jeddah, and Hofuf, though their effectiveness has been much reduced by the introduction of the municipal system.

the early years of this century, may be taken as an additional reason for the adoption of such narrow twisting lanes because (a) they reduced the town area which had to be defended to the minimum, and (b) they served as a trap to the Bedouin marauders if they succeeded in penetrating the town wall, where they could be contained and if possible eliminated before they could do much harm to the inhabitants of the town.

(6) Civic feeling among the Middle Eastern town dwellers was in general weak because of the vertical structure of the town society.[75] Indeed, people in Hofuf and Mubarraz towns were proud not of their towns but of their families, clans, tribes or the religious sect to which they belonged. There was no pride at all in belonging to a certain town. This, is reflected in the complete lack of planning organization. The twisting lanes were completely neglected and left dusty and sometimes also polluted with unclean water which drained into the lanes from the surrounding houses. On occasions one also found garbage thrown in these lanes. During the rainy season the accumulated water on the flat roofs of the houses drained into these lanes and made access through these lanes rather difficult. These are some signs showing how weak civic feeling was among the inhabitants of Hofuf and Mubarraz and how this affected street conditions in the old quarters of the Oasis towns.

The final feature of the narrow twisting lanes of the towns in this area is the existence of what are called Sakifah or bridged lanes which are still visible in the old sections of the towns (Plate 9.3). On top of these covered lanes one could see one or two rooms, underneath which the lane passed. Some explanations may be advanced for the existence of this phenomenon. (1) The Sakifah were probably built to support two high walls on both sides of a street without which they would collapse. (2) It may have been adopted because the occupants of the two houses opposite each other were parts of one large family who wished

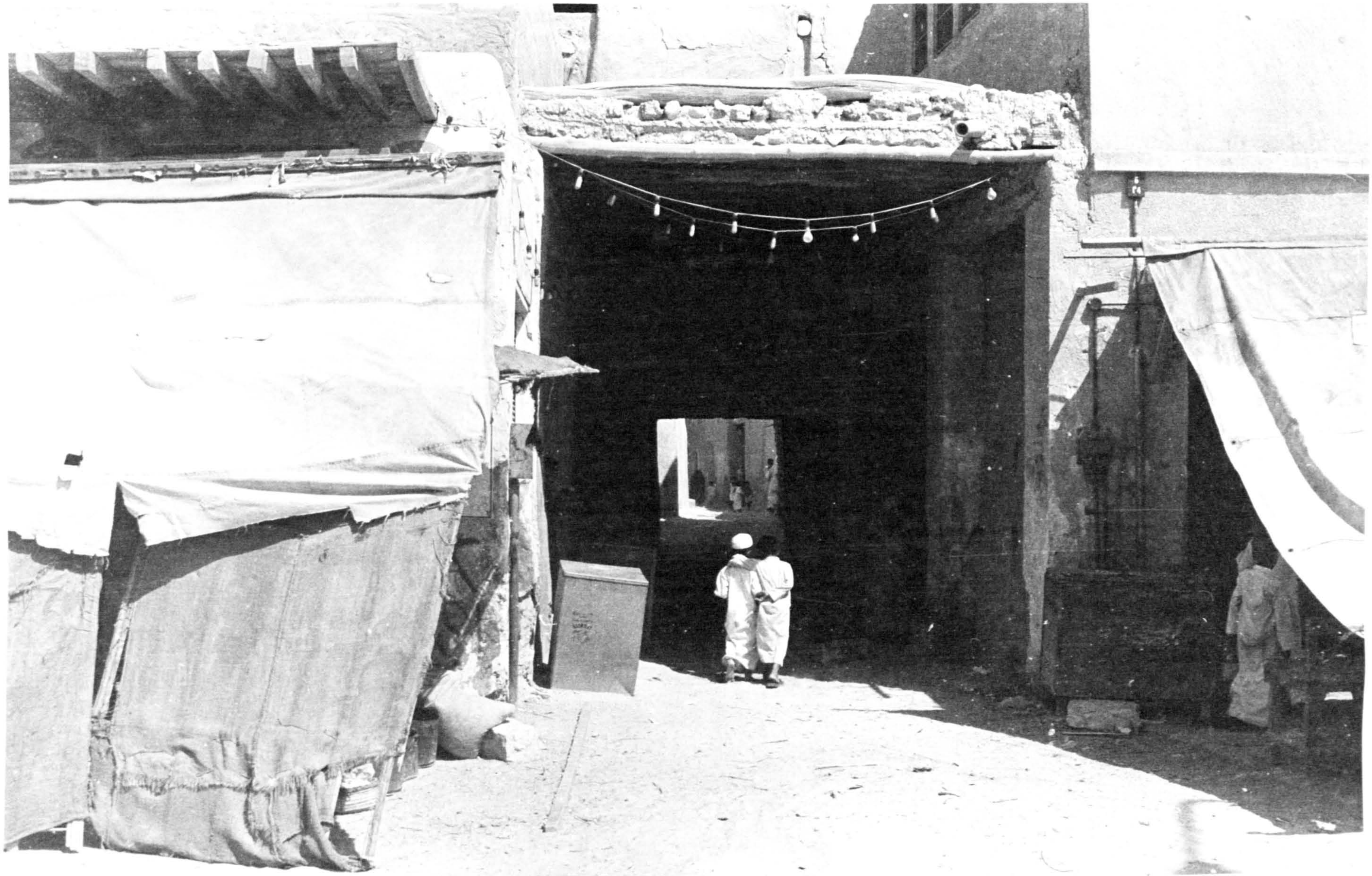

Plate 9.3 The Sakifa (a roofed narrow street) used to be a common feature in the old towns of Hofuf and Mubarraz.
A Sakifa in the ar-Rif'ah Quarter of Hofuf

to move from one house to another without actually leaving the house, so that they built the Sakifah as a bridge between the two houses. (3) Sometimes a house became over-crowded and if there was no way to expand the house to accommodate the whole family, then the building of an additional room or two over the street was considered the only way to solve the accommodation problem. That, of course, needed the agreement of the opposite neighbours if it was to be approved. (4) It perhaps has a climatic reason. It is natural for anybody living in the severe climate of the desert to adopt structures like the Sakifah, firstly to accelerate ventilation in the narrow streets as has been mentioned before, and secondly, to catch the cool breeze which flows uninterrupted through the Sakifah, by building a room or two over it with windows facing the two ends of the street and so creating a draught in the building. (5) The Sakifah might have been built not only out of necessity but also for social prestige, to show who was the respected one in a given area.

However, whatever the reason behind the building of Sakifah over the narrow streets of Hofuf and Mubarraz, they certainly served a combination of functions not only for its owners but also for the town as a whole. Apart from their function as a means of providing cool air for the Pedestrian in the street over which it was built, they could also be used as watch towers during an enemy attack deep into these towns. It is worth while to note that this is not a unique feature in the towns of Al-Hasa Oasis but that it existed in many towns in Saudi Arabia as well as other parts of the Middle East and North Africa.[76]

Houses in residential quarters of the towns were mainly one or two storied structures,higher buildings being rarely found. As in other towns of central and eastern Arabia they were built of fragile perishable local materials, mostly of sun-dried bricks which were shaped in moulds and smoothed by hand. The exteriors of these houses were usually smoothed

with mud and whitewash but, on occasion, left rough. More care was taken with the interiors of the buildings. All the houses were surrounded by high mud walls, often windowless on the ground floor. The main entrances opening onto crooked narrow streets were strong and occasionally there might be small rectangular or circular apertures high in the wall of the ground floor, just below the ceiling (Plate 9.4). All roofs were flat and were often surrounded by mud walls, 2 metres high so that they could be used as bedrooms during the hot season. The basic unit in the houses was the square room.

The basic plan of houses in Hofuf and Mubarraz was, like those of other Middle Eastern towns (Chapter 3) probably derived from the pre-Islamic peristyle house which imitated the Greek columned courtyard. Rooms opened out from all four sides of the courtyard, facing inward onto a patio.

Generally speaking, the form,structure and the architectural principles of houses in Hofuf and Mubarraz were consistent with Islamic religious and social attitudes and with available building materials and climate.

Islamic religion is "hostile...to luxurious dwellings...and to lofty ones, which are symbols of pride and arrogance."[77] Thus the low-built house is characteristic of the Islamic towns of the Oasis. Big apartment dwellings were almost absent in these towns. This characteristic is emphasised in the Oasis, since the traditional sun-dried clay bricks are so fragile that building high dwellings is inadvisable, for they are dangerous, especially in the rainy seasons, when they are most liable to collapse.

The principal law of Islam, the concealing of women from the outside world, also required that the house should provide maximum privacy and protect its dwellers from the eyes of outsiders.[78] Consequently the

Plate 9.4 The entrances of houses in a street in the ar-Rif'ah Quarter of Hofuf town. Notice the small rectangular opening on the right side of the picture and the lack of windows on the street

ground floor of each house had no windows on the street except for a few small rectangular openings high in the wall just below the ceiling, so that pedestrians could not see women-folk inside the building. This ground floor is also designed in such a way as to meet the necessity of shutting out the typical dusty hot climate of the Oasis. In order to allow enough air and light into the house, a court or patio was built as a central feature of the house. Around this were arranged rooms, into which windows opened. The arrangement of the rooms and their windows would follow a correct orientation so as to catch the cool breeze. If the patio was broad enough, it could be regarded as a garden, and trees or other greenery would be planted. This kind of garden would lower the temperature of the house in the hot season in sharp contrast with the hot burning street outside. Various parts of the house were used at different times of the day and year. Semi-open spaces were for coolness and breeze, and closed rooms with no external walls for shelter against the hot sun of summer as well as against the chilly cold of winter.

The whole house plan was also affected by the type of social life in such a society. The Majlis (the sitting room) of the men was always screened from the rest of the house as a private family sanctuary. The rest of the house consisted of living room, bedrooms, store room, kitchen, privy and sometimes a well. All these different divisions were arranged round the patio or the central court.

The size of the house had to be large to accommodate the whole family of sons and their wives, and in some cases, sisters, aunts, cousins and uncles, due to the strong family and social ties. If the family was too large to be accommodated in a single house, then a group of houses was built close to each other to serve the family's requirements.* That is why some districts were named after particular families, for example

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*Personal observations in the old quarters of Hofuf and Mubarraz during the field work of 1972-73

Fariq al-Milham, Fariq al-Qusaibi and Fariq al-Muhana. These are subdivisions of the an-Na'athil quarter of Hofuf, which was itself named after a clan of the Bani Uqail tribe as it has been stated by al-Abdal-Qadir.[79]

Building materials were the local sun-dried bricks of clay, or occasionally limestone. Roofing consisted of a network of palm fronds or a layer of reed matting which could be covered with mud to form the roof or the base for the next floor.

The houses were usually furnished with the locally made mats and covered with carpets or rugs. Quilted bedding, cushions, arm-rests and large pillows were usually added to the sitting rooms and sometimes to the living rooms. Coffee hearths were found in all houses.[80]

Significantly, the dwellings of Hofuf and Mubarraz were generally characterised by their simplicity from outside (see Plate9.4), in contrast to their relative elegance from the inside, though there were exceptions. The houses of the wealthy people of both towns were adorned with columns and plaster ornaments surrounding the courtyard.

Generally speaking, the different features of a house - the mortar, the whitewash, the decoration and the general elegance - reflected the economic condition and social status of the owner.

Many of the larger houses of Hofuf were provided with wells (20 or 25 feet deep) for their domestic water supply. Those houses which did not have such facilities used to get their water from several public wells found in all quarters. These public wells had roofed enclosures built round them and were provided with basins, spillways and sometimes ablution facilities.[81]

The residential outskirts in Hofuf were less dense than the centre and some areas of land near the town wall were unused. Land values in these marginal areas tended to be lower than those in the centre and this

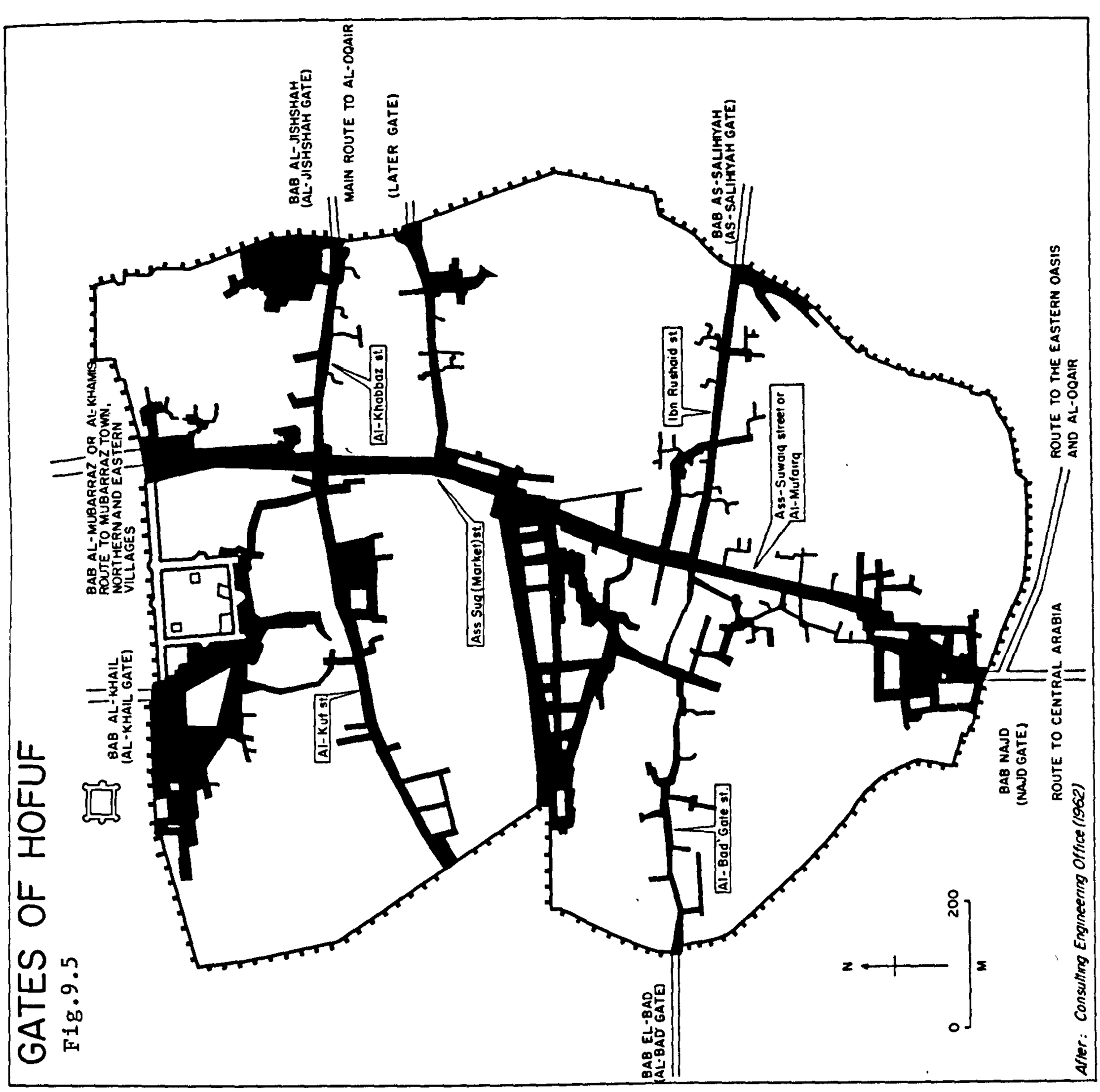
may have encouraged the use of the land for agricultural purposes.[82]

Some districts of Hofuf were primarily residential and others primarily commercial and administrative centres. However, these divisions were not rigid.

Beyond the residential areas of Hofuf and Mubarraz were the walls which surrounded the towns. These were built of rough stone and contained several fortified gates which were the only means of entry into and departure from the town.[83]

It seems that the position of the old gates, which had been erected in the east and south-west because of the trade route between the Gulf and central Arabia, and in the north because of the trade route from al-Qatif to central Arabia have influenced the main thoroughfares of Hofuf town. The principal gates are the Bab al-Jishshah in the east, through which travellers from the Gulf via al-Oqair enter the city, the Bab Najd in the south-west, which, as its name implies, opens the road to Najd (central Arabia), and the Bab al-Mubarraz on the north, which leads to Mubarraz town, the northern villages of the Oasis and al-Qatif (Fig 9.5). The largest streets in the town have been orientated towards these three gates. The main street in the town is called as-Suq (the market street). It stretches from Bab al-Mubarraz in the north to Bab Najd in the south-west of the town. This street almost divides the town into two equal parts: the ar-Rif'ah and as-Salihiyah quarters in the east, the al-Kut and an-Na'athil quarters in the west. Rihani describes this street as "the broadest street I have seen in Arabia, and the busiest - a broad and very attractive street with arched arcades - the Rue Rivoli of Al-Hasa".[84] The southern portion of this street is called as-Suwaiq (little market street) for it is narrower than the northern portion.

The second important street of Hofuf was the one which enters the town through al-Jishshah or al-Oqair gate in the east (presently Al-


GATES OF HOFUF
Fig.9.5
BAB AL-JISHSHAH (AL-JISHSHAH GATE)
MAIN ROUTE TO AL-OQAIR
(LATER GATE)
BAB AS-SALIHYAH (AS-SALIHYAH GATE)
BAB AL-MUBARRAZ OR AL-KHAMIS ROUTE TO MUBARRAZ TOWN, NORTHERN AND EASTERN VILLAGES
BAB AL-KHAIL (AL-KHAIL GATE)
Al-Khabbaz st.
Ibn Rushaid st.
Ass-Suwaiq street or Al-Mufairq
Ass Suq (Market) st.
Al-Kuf st.
Al-Bad' Gate st.
BAB EL-BAD (AL-BAD' GATE)
BAB NAJD (NAJD GATE)
ROUTE TO THE EASTERN OASIS AND AL-OQAIR
ROUTE TO CENTRAL ARABIA
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After: Consulting Engineering Office (1962)

Khabaz gate) and runs as far as as-Suq street at the heart of the town. Cheesman thought it one of the busiest streets in Hofuf.[85]

The gates of Mubarraz were similar to those of Hofuf, the only difference being that Mubarraz had only one main thoroughfare stretching from Dirwazat al-Harah in the north to Dirwazt al-Maksab in the south.

The wall of Hofuf had a varying height of 12 or 15 feet to 30 or 35 feet or even more. The thickness also varied from over 20 feet wide in the wall surrounding al-Kut quarter to only 3 or 5 feet in the rest of the town wall.[86] Information concerning the wall of Mubarraz is lacking but Mackie suggested that it was not inferior to the wall of Hofuf.[87]

The Bedouin camping grounds were always located outside the town walls; ar-Ruqaiqah to the southwest of Hofuf and al-Hazm in the western part of Mubarraz.[88] Also, the cemeteries of both towns were located outside the towns walls near their gates for access. Shii'a cemeteries were near the Shii'a main quarters and the Sunna cemeteries near the Sunna quarters.

Conclusion

It appears from this study that both Hofuf and Mubarraz originated mainly as trading centres or stopping stations on the ancient caravan routes between central Arabia and the Arabian Gulf. Their locations in a heavily populated Oasis, with a surplus of agricultural produce, made these towns especially important. Hofuf was the largest single trading centre in Al-Hasa Oasis and a gateway for trade with central Arabia. This commercial function had in fact enhanced the initial growth of both towns and caused Hofuf in particular to expand faster than some of the older towns in the Oasis. Each one of these towns had also at one time or another served as a capital for local government or as a regional administrative centre and, as this chapter will show, commercial importance was directly related to their growth or decline.

The internal structure and morphology of the Oasis towns reflect man's ability to adapt his habitation in the harsh environment of the desert, despite all the challenges imposed by such an environment, and also indicates how man's beliefs and needs can affect the shape of his town or his house. The morphological elements of Al-Hasa towns, discussed in this chapter, reveal some similarities with the typical Islamic town, discussed in Chapter 3, but some aspects of recent changes which have taken place in the morphology of the Oasis towns will be examined in Chapter 13.

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CHAPTER 10

TRADITIONAL RURAL SETTLEMENT

10.1 Population Characteristics and Settlement Pattern

Al-Hasa Oasis is, according to Wakuti, considered to be one of the oldest agricultural areas in the Middle East, in consequence of the existence of water and the availability of suitable land for cultivation.[1] The area is thought to have been settled since late Neolithic times.[2] Unfortunately, no population census has ever been published in the country though the first enumeration of the population was carried out in 1962-63. However Vidal[3] and more recently Wakuti[4] estimated the population of the Oasis at about 160,000.

As expected, the Oasis is densely populated, with approximately 6,000 hectares (60 sq.km.) and over 40,000 inhabitants residing in the eastern part. The northern part has an area of approximately 3,000 hectares (30 sq.km.) and well over 20,000 inhabitants. Part of the population resides on the edge of the Oasis, but most inside the date garden belt. This is so despite the fact that date gardens provide an unhealthy environment, because the surplus water accumulating there after irrigation becomes a breeding ground for malarial mosquitoes and many other insects whose habitat is stagnant water. Obviously an explanation of this apparent anomaly must be sought in cultural rather than geographical factors.

The cultural factors include history, religion, and human activities. Firstly the history of the area saw many changes in the geopolitics and civilisation. This is only to be expected, since the area under consideration has probably been one of the strategic commercial centres of eastern Arabia from time immemorial.[5] Thus it has been a meeting place of different races, cultures, and nations. Ancient Sabaean, Ma'aenean,Percian,[6] and possibly Gerrahean elements met there in turn and mingled with the native population. Some negroid elements

had also found their way to the area in consequence of the slave trade.[7] Then followed the Carmathians from Mesopotamia and the Turks from Asia Minor. Each contributed its racial strain and its way of life to the already existing mixture. In this way people who reside inside the date gardens have acquired, in the words of Abul Ela "foreign blood by intermarriages".[8] The most striking thing about this mixture, however, is that racial prejudice is practically non-existent among the people. The probable reasons are, first, because they all embraced the religion of Islam, which accords equality among all Muslims irrespective of colour and lineage, secondly because they had a common interest in cultivating the land upon which they depended for their livelihood, thirdly and finally, because they had a common enemy in the Bedouin tribes who roamed the surrounding deserts and threatened their very existence, so that any dispute between the people had to be solved as quickly as possible in the interest of the community as a whole.

These historical facts indicate that unlike the tribes who were living in the surrounding desert, the indigenous population of the area had no common patriarchal ancestors, and therefore, no tribal organization, which made them quite different from their neighbours. Thus they were subject to frequent attacks by those tribes who were living nearby in the desert, particularly when there was weak central government. To protect themselves and also their way of life which was different from that of the Bedouins, the indigenous population chose to reside in villages built inside the date gardens belt, even though an unhealthy environment existed there.

Secondly, the great majority of those who resided inside the date gardens, embraced the Shii'a sect in contrast to the Bedouins who always followed the other Sunna sect of Islam. The different interpretations of each sect if the precepts of Islam probably led to conflicting opinions

and thus to sectarian warfare between them. It seems that the Shii'a isolated themselves in an unhealthy area, surrounded by Sunna, either to protect their own beliefs or to at least minimise the harmful effects of any immediate outbreak of hostility between the two communities.

Thirdly, all the inhabitants of the inner villages were farmers, depending for their livelihood on cultivating the soil. Thus it was economically safer and, perhaps, more convenient for daily work for them to live near their gardens than to reside further away.

These are probably the basic differences between the two communities of Al-Hasa Oasis which forced one part of the population to reside within the unhealthy environment of the date gardens, whilst the other part of the population resided at the periphery of the Oasis.

The racial composition of the Oasis population is very mixed. Those who reside on the edges of the Oasis are usually Bedouin tribes in origin with a high degree of racial purity, the result of relative isolation and subsequent in-breeding. Purity of race becomes less and less evident as one moves away from the periphery of the Oasis towards its centre.

This is probably because the Bedouins only settled in the area at a later date, according to Abul Ela [9] in the thirteenth century AD, despite the fact that they have always roamed the surrounding desert. They might have decided to settle at the periphery of the Oasis because of their close connection with the desert, their original home, and because of their enmity with the settled population of the Oasis which has already been discussed.

The conflict between the settled communities, such as the Oasis community, and the Bedouin tribes is a well-authenticated fact throughout Arabian history. Its precise causes cannot be traced, since it has existed in Arabia from time immemorial. The conflict seems, however,

to have cultural as well as economic roots. It may represent the struggle between the tribal and the urban systems with all their ramifications. It may also represent the struggle between the haves (the settlers) and the have-nots (the Bedouins). What aggravated the problem in the case of Al-Hasa Oasis, however, was the division of the population between Sunna and Shii'a (the two major divisions of Islam). The Bedouins have always followed the Sunna sect, while the majority of the indigenous farmers of the Oasis embraced the Shii'a sect. However, the impact of this conflict upon the settlement pattern of the Oasis will be considered later in this chapter.

The third characteristic of the Oasis population is its rural-urban composition. This situation heavily favours the rural culture at the expense of the urban. The urban culture was, indeed, limited to two towns in the Oasis, Hofuf and Mubarraz, though they too contained some minorities who were engaged in agriculture in the nearby gardens. In 1937, according to Vidal,[10] Von Wissman estimated the population of the Oasis at 150,000 inhabitants. He gave Hofuf, the largest town in the Oasis, only 30,000 souls, while Mubarraz was an even smaller town and not worth mentioning. If we generally allow Mubarraz the same size as Hofuf, this would give us another 30,000 urban population for Mubarraz; thus we would have 60,000 urban population against 90,000 rural population. Consequently, at least 60% of the inhabitants of the Oasis in 1937 were considered rural population. We should stress the words "at least" because some minorities in the two towns were actually engaged in pure agriculture in the nearby gardens, so that they too should be treated as rural population. Indeed, it is a well-known fact among the inhabitants themselves that the majority of them are fallahin (agriculturalists) settled in villages.

The village type of rural settlement prevails in the Oasis. It is

sedentary and subsistence orientated, based mainly on the cultivation of date palm with some fodder crops. Unlike some other parts of the world, isolated farmsteads did not exist here in the traditional period because they were vulnerable to Bedouin attacks. Farmers and animals lived together in the village, from which they would go out daily to work in the surrounding gardens, returning to the village in the evening.

10.2 The Evolution of the Village

How this village type of settlement originated in this area, and in what manner it evolved, is not known and may be completely lost in the remote and obscure past. What is certain is that the village was there long before the Christian era, for Forster traced the first settlers in this area to the primitive Kashite population who had been absorbed by the Ishmaelite settlers long before the days of Christianity[11] (see Chapter 8). Whether the village type of settlement in this Oasis existed from the beginning or developed gradually by stages is a matter for speculation.

However, from frequent observation of the Bedouin camps in this area, and other parts of Saudi Arabia, from observation of earlier stages of the contemporary settlements (centres and suburbs), and from various interviews with natives of the Oasis, it is suggested that the evolution of the Oasis village passed through a number of successive stages before it finally reached the stage of being a village.

Stage 1

The initial transition was probably from pure Bedouins, roaming the desert at a distance from the Oasis. Bedouins would visit the Oasis each summer, as happens now with the oases located in the Arabian deserts. These visits would, indeed, be necessary for harvesting the date crop, which ripens in summer, selling animal products, and buying what was needed for the coming winter in the surrounding deserts.

When these Bedouins arrived in the Oasis, they did so in groups.

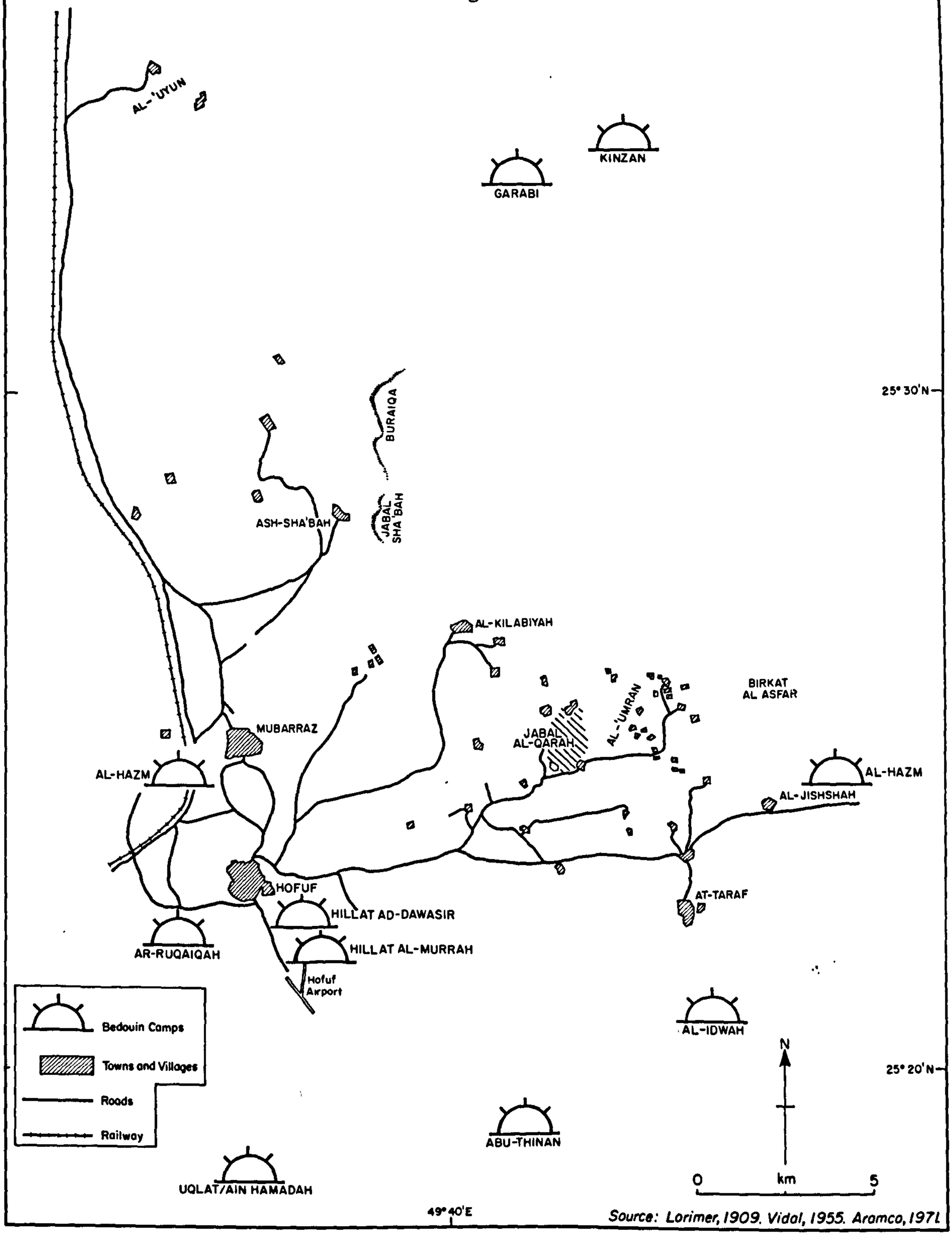
Each group consisted of families closely related to each other by paternal lineage, i.e. they usually came from a distinctive clan and from a certain tribe. On arrival, these groups erected their camel or goat tents in chosen locations on the outskirts of the Oasis, so that they could carry on with their pastoral pursuits in the surrounding deserts and at the same time be near the markets and the water resources of the Oasis (Fig 10.1).

These locations may well have changed several times during frequent visits to the Oasis until each group managed to find a convenient site which met their needs. The frequent occupation each summer of a certain site by a certain group would give that site a certain identification, so that each site would become identified with the ancestral father of the group that occupied it each summer. Unfortunately, we could not trace the origin of all the settlement names, but Table 10.1 gives examples of settlements which were originally named after a family, clan, or even tribe.

Stage 2

Some families from each group stayed for some reason in their chosen location for the whole year. Thus, these families, possibly joined by other families from the same clan in subsequent years, formed the nucleus of a temporary settlement consisting of tents. The population of this tiny temporary settlement continued their pastoral pursuits in the nearby deserts, but confined themselves to a daily walking distance, driving their animals out early in the morning and returning to their tents in the settlement in the evening. At the same time, not all the family members would go to look after the animals in the surrounding deserts, but some would stay behind to keep an eye on the tent, look after the elderly and the very young, or to do the domestic work. In this way interest would gradually be lost in herding, which would become a job

Fig.10.1 BEDOUIN CAMPS IN AL-HASA OASIS



Source: Lorimer, 1909. Vidal, 1955. Aramco, 1971.

TABLE 10.1

Some Contemporary Settlements Named after Families, Clans or Tribes

Settlement	Origin of Name	Soure of Information
Villages		
al-Kilabiyah	Named after the Bani Kilab (the sons of Kilab) tribe which descended from Rabi'a Ibn (son of) A'mir Ibn Sa'sa'ah	al-Abdal-Qadir[12]
al-Miqdam	al-Miqdam is a major section of the Bani Khalid tribe	Abul Ela[13]
Bani Ma'n	Named after a clan from the ancient Hemiar tribe which settled in this site in the past	al-Abdal-Qadir[14]
al-Tuhaimiyah	Probably named after the Bani Taim-al-Lat from the Wa'il tribe	al-Abdal-Qadir[15]
al-Fudhul	Named after the sons of Fadhil the son of Raby'a	al-Abdal-Qadir[16]
al-Jishshah	Named after Fairuz the son of Jushaish	al-Abdal-Qadir[17]
al-Battaliyah	The area was originally granted in 470 AH (1077 AD) to Battal Ibn Malik, after whom the village was named	al-Mubarak, quoted in Masrullah[18]
Quarters		
an-Na'athil	Named after a clan from the Bani Uqail tribe called an-Na'athil	
ad-Dawasir	Named after a group from the Dawasir tribe who resided there	Aramco Map[19]
as-Siyasib	Named after a clan from the Bani Uqail	al-Abdal-Qadir[20]
Uyuni	Named after the al-Uyuni family of Abdul Qais tribe who governed the Oasis and the other parts of eastern Arabia after the Carmathian days	al-Abdal-Qadir[21]
al-Qudaimat	Qudaimah is the name of a man from Bani A'mir Ibn Uqail	al-Abdal-Qadir[22]

for children and youngsters only. When they reached this stage they had become semi-Bedouins and their settlement had completed the second stage in the evolution of a village.

Since the semi-Bedouin pastured their animals in a limited area round the Oasis, as previously mentioned, the pasture in that area would become exhausted through the frequent visits of the animals. The shepherds, too, would pick up some pasture to feed the small and the old animals which would stay in the tents of the settlement.

This situation would necessitate one of two decisions. They would either have to leave the settlement and go deep into the desert to find enough pasture for their animals, or stay in the settlement and sell some of their animals, but not all, to be rid of some of their burdens. The first decision would probably mean a complete return to their original nomadism, or a temporary one if they faced drought years and hardship in the desert. In this case they might return to their settlement and follow the same procedure as before: The second decision would mean a decline in the income from and importance of pastoral pursuits, and would consequently create a need for a substitute income from occupations other than pastoralism. Thus,whilst some members of the family or families continued to look after the rest of the animals during the day, others became engaged in agriculture as labourers or, as Lorimer[23] pointed out, in trade as camel drivers. In the evening, they would all return to their tents in the settlement to spend the night with their families. When they reached this stage, it gradually became clear in the course of years that living in tents was no longer as convenient as it was before, so that each family would build a wall, using local material, possibly round each tent; for privacy, more room for the family and their animals and for protection against cold winds in winter and dust storms in summer.

Stage 3

The construction of a wall round the tent or tents in the settlement would, in fact, end the second stage in the evolution of the settlement. It also marks the beginning of the third stage in the process. Over the years, each family would construct one or two rooms in the already existing yard as storage space to protect their goods and food from the animals, or to provide a sitting room to entertain friends. Both rooms might be used as bedrooms in winter time. Such a step would add a more permanent structure to the one already existing, and thus constitute a further step towards a permanently settled life. Since tents, the mark of a nomadic life, were still kept side by side with the newly established permanent structures, the permanency of the settlement is not completely ensured. At the same time, the settlement is not looked on as a temporary one. It is, indeed, a semi-permanent settlement, and its population has completed its transition from semi-Bedouin to semi-settlers and proceeds forward to the fourth stage.

Stage 4

In this stage the inhabitants became more and more involved in agriculture and trade, and thus their dependence upon the agricultural economy increases, while their pastoral economy decreases. Thus, the more they become tied to the soil, the greater the gap becomes between them and their original tribe which still leads a nomadic way of life in the desert. Indeed, from here the differences and consequently the struggle begins between the two sides, and this marks the beginning of the end of the transition from a nomadic way of life to a settled life. The settled inhabitants abandon the remainder of their nomadic way of life and adopt an increasingly settled way of life. They sell many of their animals, keeping only those that are needed for milk. They get rid of the tents which occupy the centre of the yard erected during the

third stage, so that the yard can gradually be elaborated to contain more rooms, a kitchen, toilets and other facilities. In this way, the whole settlement would completely change from tents only in the second stage, to part masonry and part tents in the third stage, and finally to permanent structures only in this stage. This marks the end of nomadism and the beginning of a permanent settled way of life. Thus the settlement has become a permanent settlement, and its inhabitants have become permanent settlers.

Stage 5

In the course of years, some or maybe all the above-mentioned stages might be repeated round the fourth-stage core, so that the settlement would be gradually enlarged to a reasonable size and have a considerable population. Then the settlement would have changed from a small, permanent agricultural settlement in the fourth stage to a complete village in this stage. This stage could also be achieved through immigration from other settlements which had passed through the same process of evolution. This migration could occur for social and economic reasons. Thus the village in this stage would not contain only a certain clan, as was the case in the previous stages, but a mixed population from different clans from various tribes and from non-tribal families.

However, we should stress here that this is only the paradigm of the evolution which produced the Oasis village. Not all the villages of the Oasis evolved through the whole of this process, for while this pattern seems to apply to most of the peripheral villages of the Oasis, the inner villages do not conform to this model, their inhabitants being not Bedouin but migrants from peripheral settlements that had already evolved beyond the earlier stages.

The outer villages of the Oasis seem to have acted over the years as transit places where the Bedouin abandoned their nomadic life before

moving on to the inner villages with settled populations and no tribal organisation. This is why the inner villages have not passed through all the above stages of village evolution. In general, it can readily be seen that, as one moves from the interior towards the edges of the Oasis, villages assume a less and less permanent character until nomadism is reached. The clan of Al-Jubur of the Bani Khalid tribe, who used to roam with their herd over a large area along the eastern borders of the Oasis, have now completed the process of transition from pure nomadism to pure settlers. They now occupy the village of al-Jishshah at the edge of the eastern part of the Oasis. Some other clans from different tribes have begun some time ago to live in more permanent dwellings in various villages, for example the al-Miqdam of the Bani Khalid tribe in al-Kilabiyah village on the northern borders of the Oasis. Many groups from ad-Dawasir, the Al-Murrah, Bani Hajir, Sahul, Mutair, Subai, Utaibah and Qahtan tribes, have settled in ar-Ruqaiqah and al-Hazm, the former Bedouin camps described by Lorimer.[24] These two localities have now been incorporated in the towns of Hofuf and Mubarraz respectively. A process of transition can also be observed in most of the peripheral villages and towns, where the writer has come across modified forms of original nomadic and semi-nomadic stages.

10.3 Pattern of Settlement Sites

The choice of a settlement site in the Oasis is determined or influenced by many and varied factors. Some of these are more decisive and more commonly present than others. An obvious instance is the availability of water. Water is, indeed, of fundamental importance, for man cannot live without it. It is needed for domestic as well as for construction purposes. The importance of this factor can be better appreciated when one realises that the yearly average rainfall in the Oasis is only 65.7 mm. as it has been explained in Chapter 6. Fortunately,

springs are abundant in the Oasis, so that some villages have one or more springs running near them or just outside their limits. Most of the villages in the north and north-east of the Oasis, where springs are scarce, get the necessary water from wells dug to varying depths until the underground water table is struck (see Chapter 7).

Defence requirements played a large role in the past in deciding settlement sites in the Oasis, especially at the beginning of this century when security within the Oasis was indeed a major problem. Unfortunately, defensible sites in the Oasis hardly exist because of the simplicity of the topography of the area which has been discussed earlier in Chapter 5. But in the course of time, the inhabitants of these settlements have adopted methods by which they could defend themselves easily. These are as follows:-

(a) They have built their settlements as close to each other as possible for common defence against any Bedouin attack on any settlement in the group.

(b) They have constructed fences round the outer villages which face the deserts.

(c) Alternatively, they built their settlements well inside the date belt for safety and security. In all these cases the settlers have chosen the site that best lent itself to defence. These measures were essential to facirg the marauding Bedouins who were the masters of the Arabian desert in those days. This factor has now lost its significance in the Oasis because of the prevailing security.

Farm location is another determining factor in the choice of settlement site. This is to be expected in view of the fact that the village people depend almost completely upon agriculture for a living. The farmer's need to work daily in the field demanded short distances as well as access to the field, so that he could travel to his work daily and

come back again in the evening to join his family in the village.

If one considers, in the words of Chisholm,[25] "the manner in which a farm is operated, it will immediately be apparent that distance is important in relation to the movement both of goods and persons", distance between the village and the farm must always be kept within daily walking distance.

The construction materials traditionally used in the settlement buildings were mostly sun-dried bricks made of clay, and palm-tree trunks and fronds.[26] These materials were and still, in fact, are abundant, and could be obtained from any site in the Oasis. Consequently, the influence of a need for building materials on the choice of settlement sites is diminished in favour of other factors.

Finally, the terrain. As has been seen in Chapter 5, the surface of the Oasis is in general flat and relatively simple, though in detail the general flatness of the area is disturbed by small and low hummocks which are found at different intervals inside the date gardens, and in particular at their edges. The only physical land-mark inside the date gardens is Jabal Qarah, which rises 67 m. above the surrounding areas. Technically, most of the area which cannot be cultivated constitutes potential settlement sites, except perhaps the peak and the steep slopes of Jabal Qarah and the sabkhas surrounding the Oasis area. Most villages have to be on high ground so as to save the arable land and keep above the flood level (from rain or irrigation), quite apart from the need for a site as defensible as possible against the regular Bedouin raids (Plate 10.1).

These are the probable factors which governed the settlement site pattern of the Oasis in the pre-oil era. None of these factors could alone decide the choice of settlement site, but each influenced it. The interaction between the different factors would eventually produce a reasonable site adequate to all the needs of the settlement inhabitants.

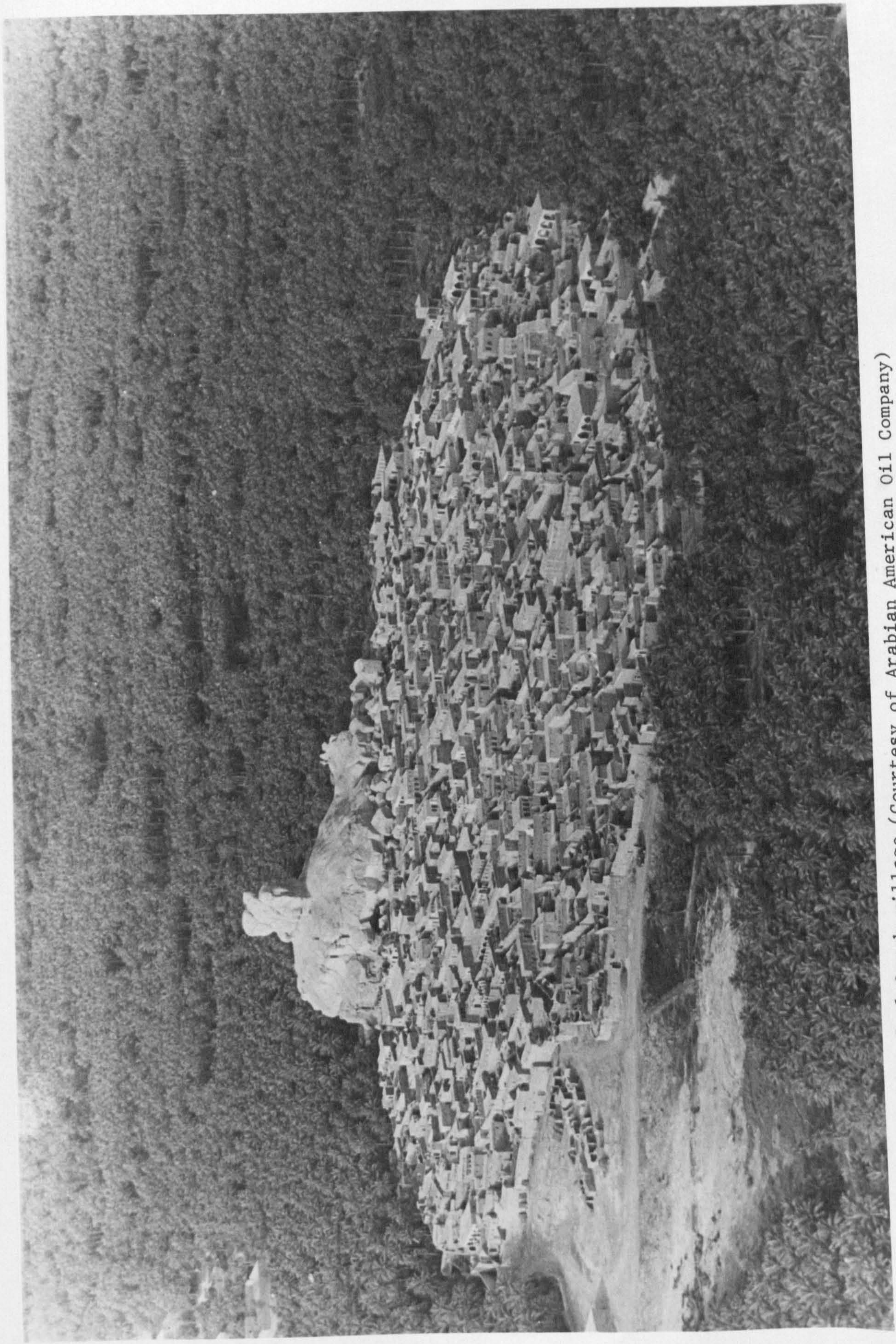


Plate 10.1 The site of al-Qarah village (Courtesy of Arabian American Oil Company)

It is striking how the rural settlements of the Oasis generally stick to this pattern of site. To save the arable land, keep away from the flood level and command a defensible site, the settlers have chosen high ground near the majority of fields and as close as possible to the other settlements for safety and security (Fig 10.2). Since water supply and construction materials are abundant in the Oasis, the need for these things has only a secondary influence on the choice of setttlement sites. Thus the division of the settlements of the Oasis into groups results directly from the above considerations.

However, if we look to the general site pattern mentioned above, we can clearly recognise three distinct features in the general pattern:-

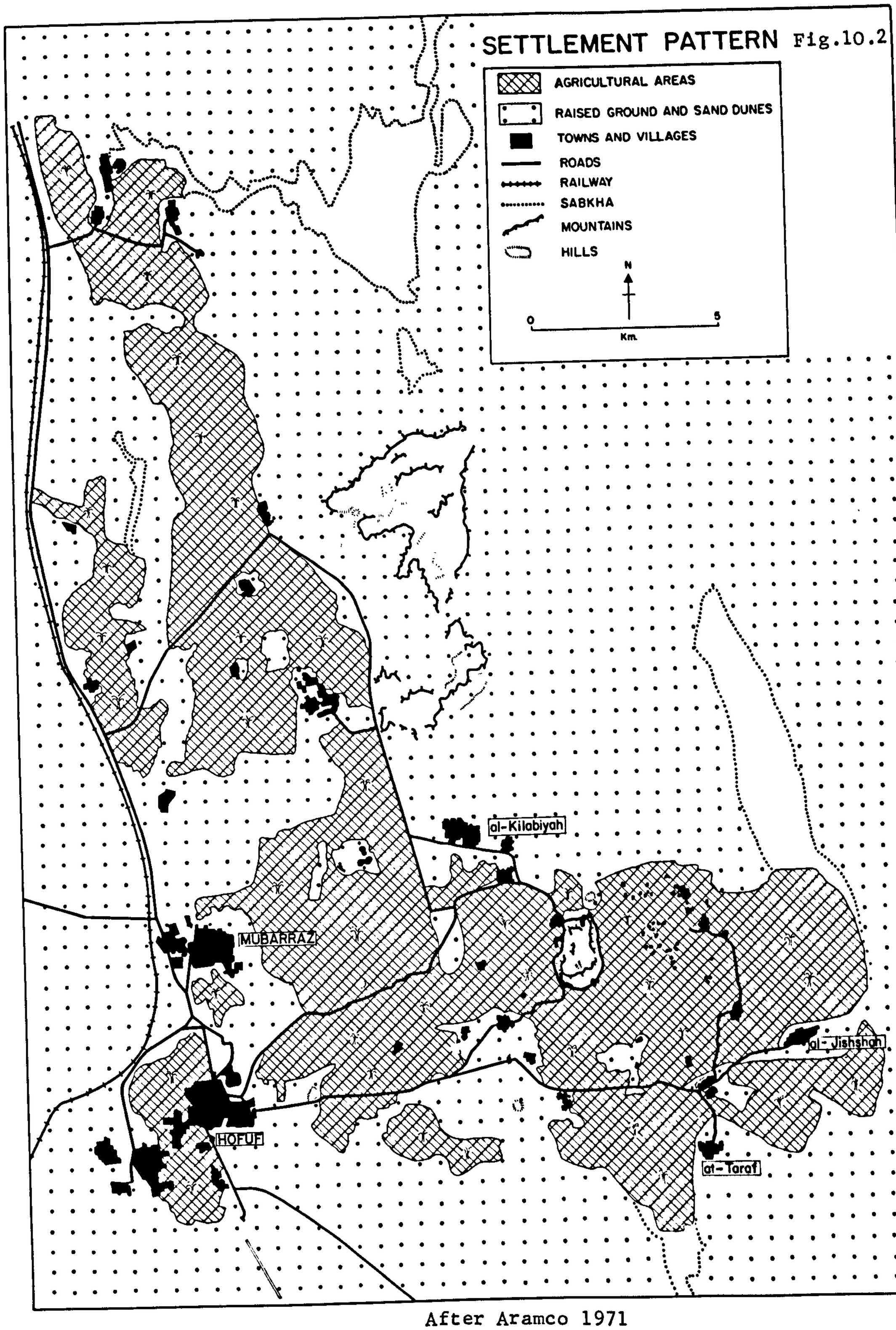
(1) The location of a string of villages at the edges of the Oasis.

(2) The location of villages and hamlets inside the date gardens within the Oasis.

(3) An absence of settlements in the north-east corner of the Oasis, just outside the date gardens.

The first feature can be explained by differences in the social make-up of the villages. The population of these settlements located on the edge of the Oasis tends to be Bedouin in origin and Sunni in religion. Bedouin life in Arabia is very much related to the desert climate. As already stated (see above), the Bedouin roamed the desert in pursuit of pasture in winter and in summer moved towards the nearby oases to avoid drought in the desert, to harvest the date crop and to buy and sell in the Oasis markets. On arrival they would erect their tents on the periphery of the Oasis so that they could carry on with their pastoral pursuits in the surrounding desert, and also avoid the malaria epidemics which were a feature of Oasis life, at the same time taking advantage of the water sources and the markets. Because they were, and in fact still are, Sunni in their religious beliefs and Bedouins in their social

SETTLEMENT PATTERN Fig.10.2



After Aramco 1971

organisation and way of life, it was very hard for them to reside inside the Oasis among a population of settlers and farmers who were Shii'a in religion.

In course of time, they were probably attracted by village life and gradually began to practise agriculture alongside pastoral farming. To cope with the demands of both occupations, they chose their settlement sites at the furthest end of the cultivated areas of the Oasis close to the desert. Eventually abandoning pastoralism, they came to depend on sedentary agriculture or alternatively became local traders. They thus relinquished tribalism and accepted village loyalties. Nevertheless, movement to the inner villages remained difficult, if not impossible, due to the religious differences, and there is thus a clear dichotomy between the peripheral villages and the settlements within the date gardens. As more and more Bedouin Sunnis began to reside in the peripheral villages, the Shii'a farmers (the former settlers) became minorities in these villages. Because the newcomers (the Bedouins) usually occupied the parts of the villages facing the desert, for the reasons mentioned above, the Shii'a farmers were gradually pushed towards the other parts facing the date gardens. When life for the Shii'a minorities became unbearable as a result of social pressures, they either moved to the other villages where Shii'a were in the majority, or established their own villages in chosen positions near the other Shii'a villages, as was the case with as-Sabat village, established by Shii'a from al-Jafr and al-Jishshah when the two later villages became overwhelmingly Sunni.[27] Nowadays, most of the inhabitants of al-Jishshah, at-Taraf, al-Jafr, Al-Miqdam, al-Kilabyiah and Al-Uyun villages trace their ancestral lines to clans from Bani Khalid, al-Ujman and Bani-Hajar tribes. Even the south-western suburb of Hofuf (ar-Ruqaiqah) and the western suburb of Mubarraz (Al-Hazm), now parts of these towns, were

formerly Bedouin camping grounds, as is indicated by Lorimer.[28]

The second feature can similarly be explained by the fact that the inhabitants of the inner villages and hamlets are completely settled farmers entirely dependent on agriculture. They have no tribal system, though some of them trace their lineage to certain tribes, and are Shii'a in religion. As has been explained before, they are thus quite distinct from the Bedouins who reside on the edge of the Oasis.

The cultural conflicts between the Bedouins and the settlers are a well-known feature throughout the Arabian History.[29] It is best illustrated by the walled towns and villages which existed in Arabia up to the 1940's and which have left remains that are still in evidence today (Plate 10.2) In the case of Al-Hasa Oasis, the religious differences between the two communities further aggravated this problem. Therefore, it was very dangerous for Shii'a farmers to reside near the desert, which was and still is dominated by the Sunni Bedouins. Instead they built their settlements inside the date belt of the Oasis for safety and security. To ensure their security through common defence, they built their settlements in groups, so that every cluster of settlements is not more than 2-3 km. from the nearby groups. If some of these settlements were too small to defend themselves, they would be built as close to each other as 300-400 m. apart (Fig 10.3).

Those Shii'a farmers who did reside in the outer villages, being in the minority, were eventually forced to move into the inner villages to live with their own sect and class.

The third feature is caused by two factors: sabkhas and sand dunes that exist in that part of the Oasis (Plate 10.3).The sabkhas and sand dunes have undoutedly affected the settlement pattern of the Oasis by reducing the possibilities of using the areas where they occur as settlement sites. The sabkhas threaten access to the fields and to other

Plate 10.2 Some remains of the old defensive features of Hofuf

A view of some of the towers that still exist in part of the old town wall

The old Qasr al-Abid ford with its huge towers alongside Shari' al-Kut al-Jadeed (New al-Kut Street) in Hofuf

SETTLEMENTS OF THE AL-UMRAN REGION

Fig.10.3

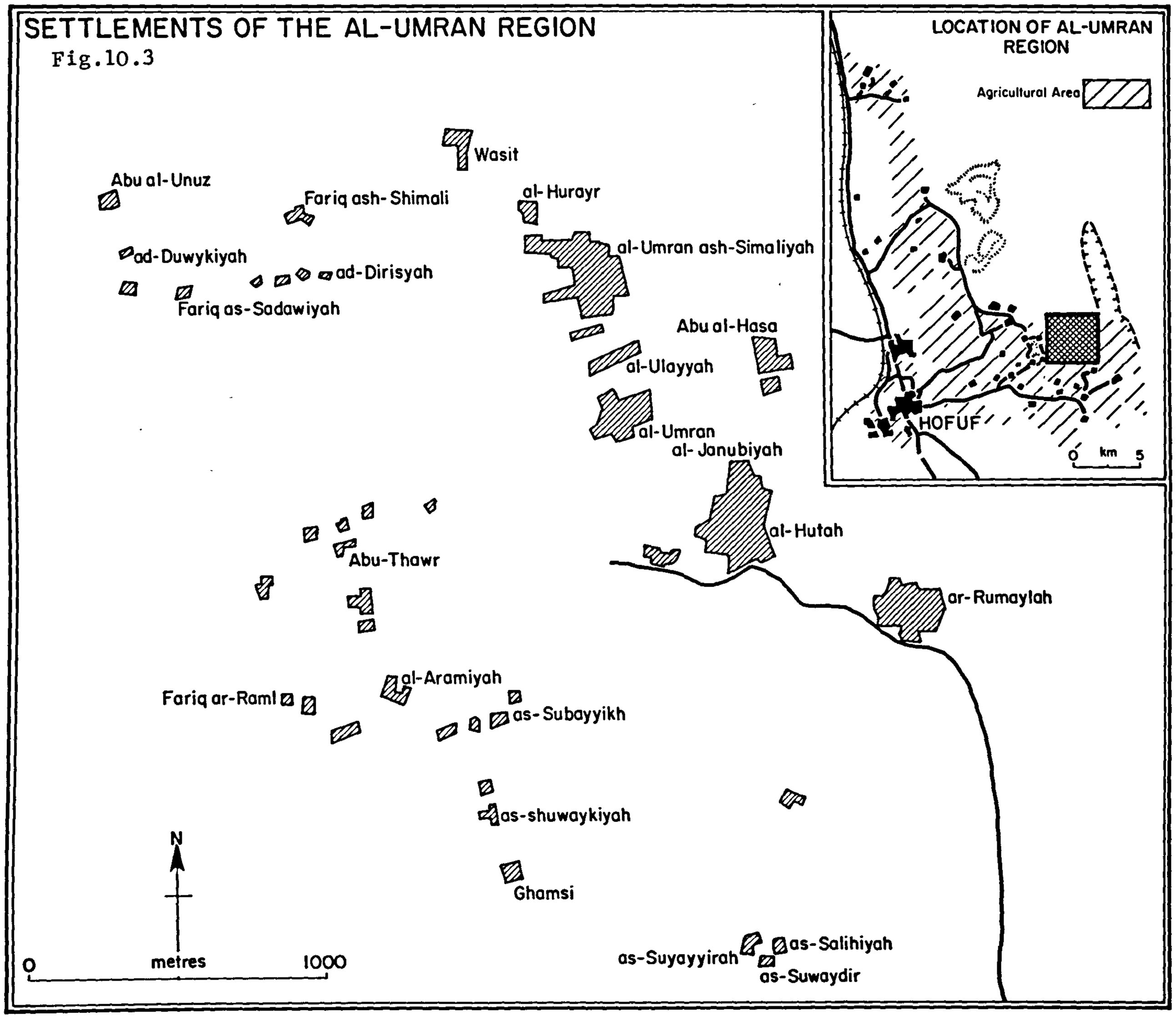


Plate 10.3 An aerial view of the north-eastern part of the Oasis, showing sabkhah and sand dunes as the major obstacles to the existence of settlements outside the date gardens in that locality

settlements, particularly in the wet season when they become an impassable morass. Moreover, sabkhas themselves were the cause of malaria epidemics, for the stagnant water that accumulated in them provided breeding grounds for mosquitoes.

The encroachment of sand dunes upon the Oasis endangers the existence of the settlements. They are also the source of dust storms and intense heat in the hot season, and they provide no construction materials. Because the Oasis is bordered by sand dunes up to 15 m. in height, a continuous sand drift coming from the dune area endangers the cultivated land and the human settlements of the Oasis. Since the dunes encroach upon the Oasis, primarily from the north, the area of cultivation shrinks in towards the Oasis centre on the northern side, and there settlements also have had to be resited, the remains of the old settlements being left to be covered completely by the sand dunes.

According to Wakuti,[30] the dunes in the Oasis can move up to 10 m. per year. Each year valuable irrigation areas are lost. In the course of the last few centuries the dunes have covered towns and settlements and thousands of hectares of fertile cultivation areas. More than a thousand years ago, the site of Juwatha (Plate 10.4) was the centre of the old Oasis.[31] When al-Abdal-Qadir[32] visited this site in 1937, he saw the remains of old cultivation, while a spring nearby was still running. This site is now located inside the sand dunes, 3 km. north of the northern borders of cultivation. Luckily, this site is still preserved for its historical and religious importance, as previously mentioned (Plate 10.5).Other settlements have been completely forgotten, buried beneath the sand dunes, and it may be assumed that there are scores of such settlement sites.

Sand encroachment upon the Oasis continues today, and the hamlet of Bani Awadh which existed up to 1955 is now completely covered with

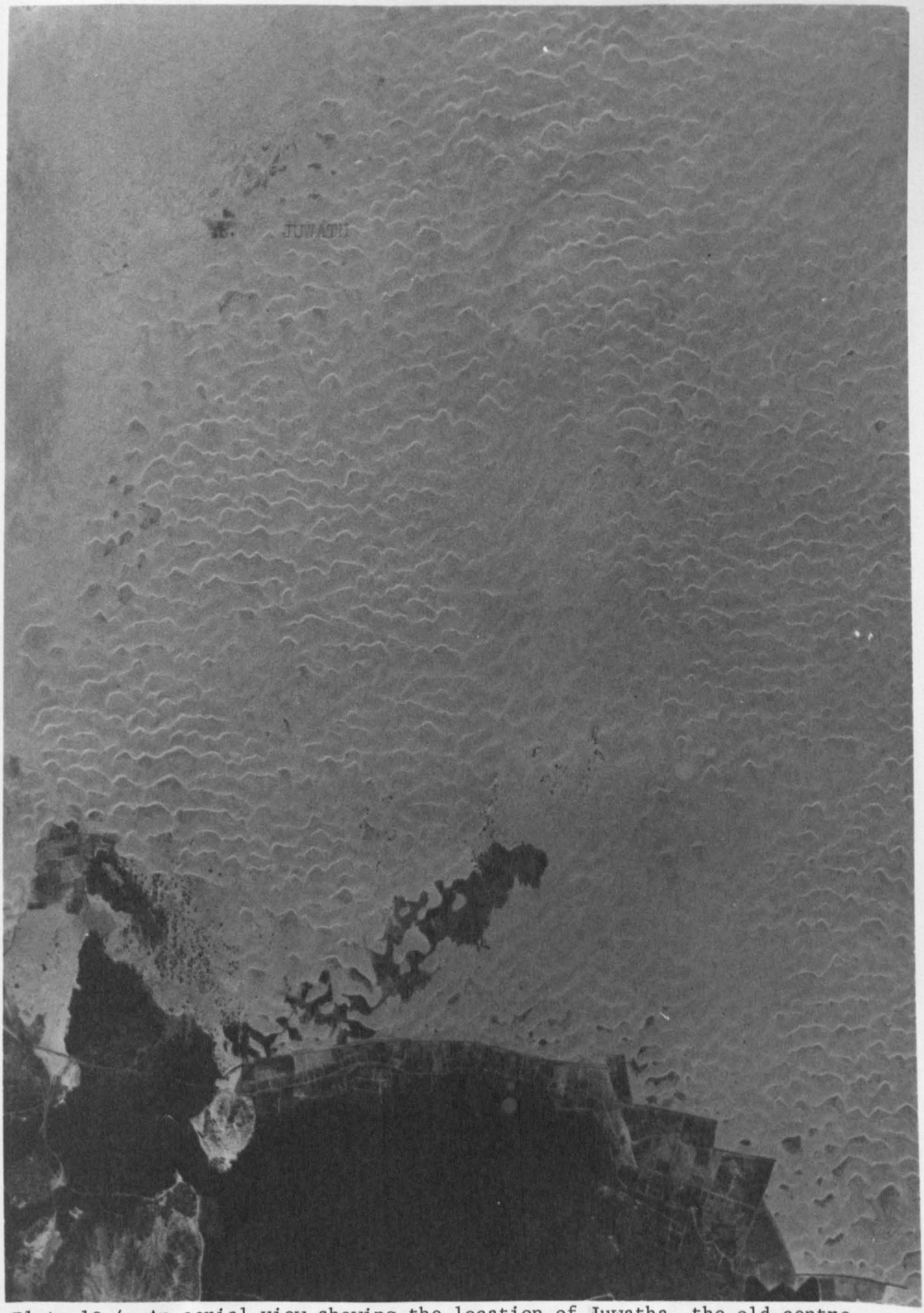


Plate 10.4 An aerial view showing the location of Juwatha, the old centre of Al-Hasa Oasis

Plate 10.5 Two views of the historical remains of the ancient mosque of Juwatha, which helped to preserve the site of this ancient town

sand, no trace of it remaining visible (Plate 10.6)The sand threat to the Al-Umran region in the north-eastern part of the Oasis caused a large proportion of its population to abandon their villages and move to other villages which were not affected by encroachment of the dunes. Some others established new villages, such as al-Mansurah, founded in 1953 in the centre of the Oasis by people from the Al-Umran region (Plate 10.7).Currently, al-Kilabyiah and al-Miqdam villages are endangered by the encroachment of sand dunes, and probably they too will eventually be buried underneath the sand, unless the Sand Stabilisation Project proves successful.

10.4 Village Morphology

The external shape of Al-Hasa village has been influenced by various elements which have succeeded, to some extent, in forming the outer shape of the village in the area. Some of these influential elements were physical, others human.

The physical ones are represented in the landform of the area discussed in Chapter 5. For instance, the slope of Jabal Qarah as well as the protruding areas in the landscape provided some areas to be used as sites for the villages of the area (see the Site Pattern in this Chapter). The physical morphology of each site has either allowed or limited the expansion of the village in certain directions and has finally affected the outer shape of the village. This phenomenon is particularly visible in the villages located on the slope of Jabal Qarah (see Plate 10.6). The buildings of these villages, especially at-Tuwaithir, are restricted from one side by the rugged rocks of the Jabal or mountain, and from the other side by the extension of the agricultural lands surrounding these villages.

The sand-dunes and the sabkhas (wet salty lands) in the area have also intervened in forming the external shape of the villages located

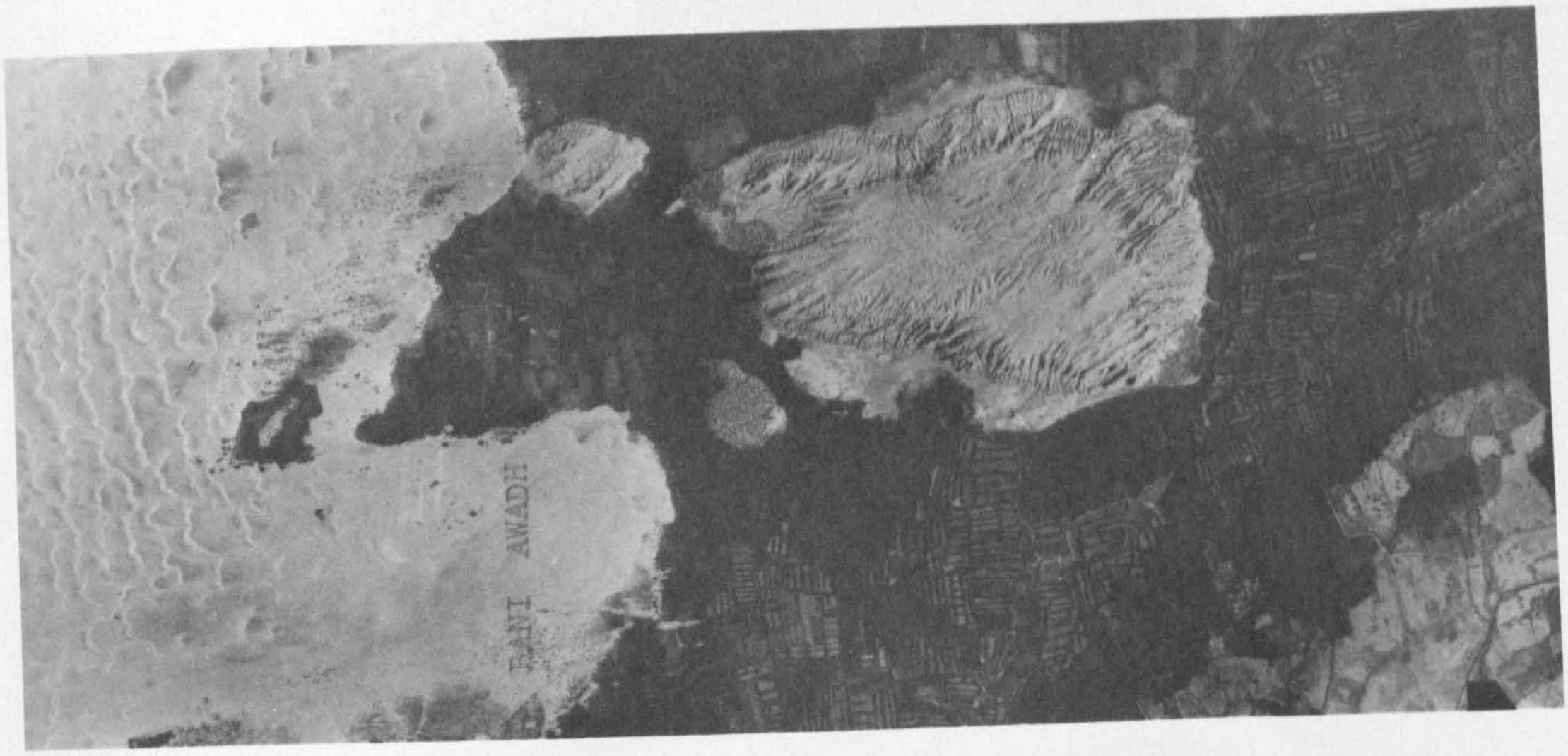


Plate 10.6 Sand threat to the settlements of Al-Hasa Oasis, illustrated by two aerial photographs of the hamlet of Bani Awadh. The hamlet existed in 1949, as is shown in the top photograph, but recently disappeared underneath the sand, as can be seen from the bottom photograph (1968)

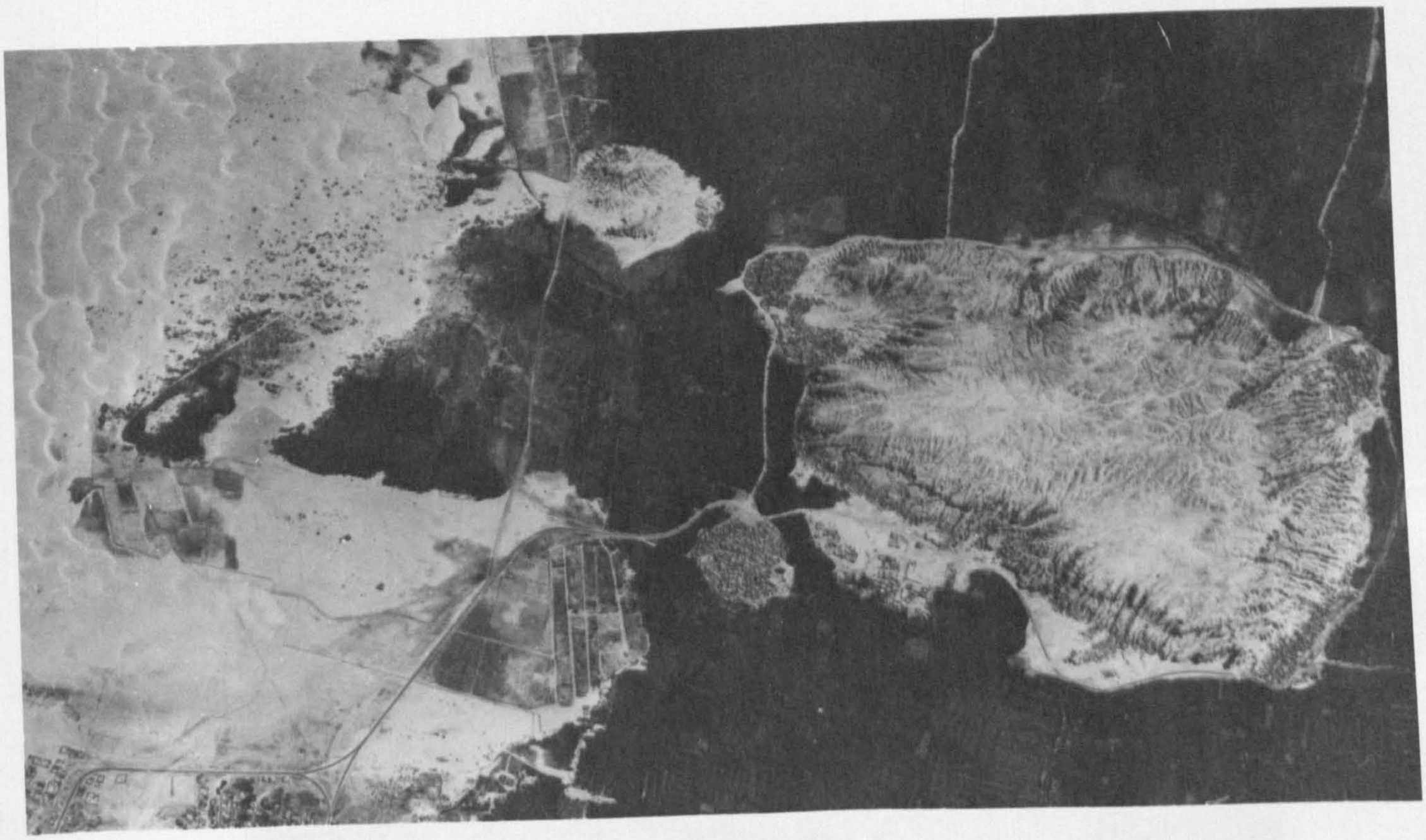


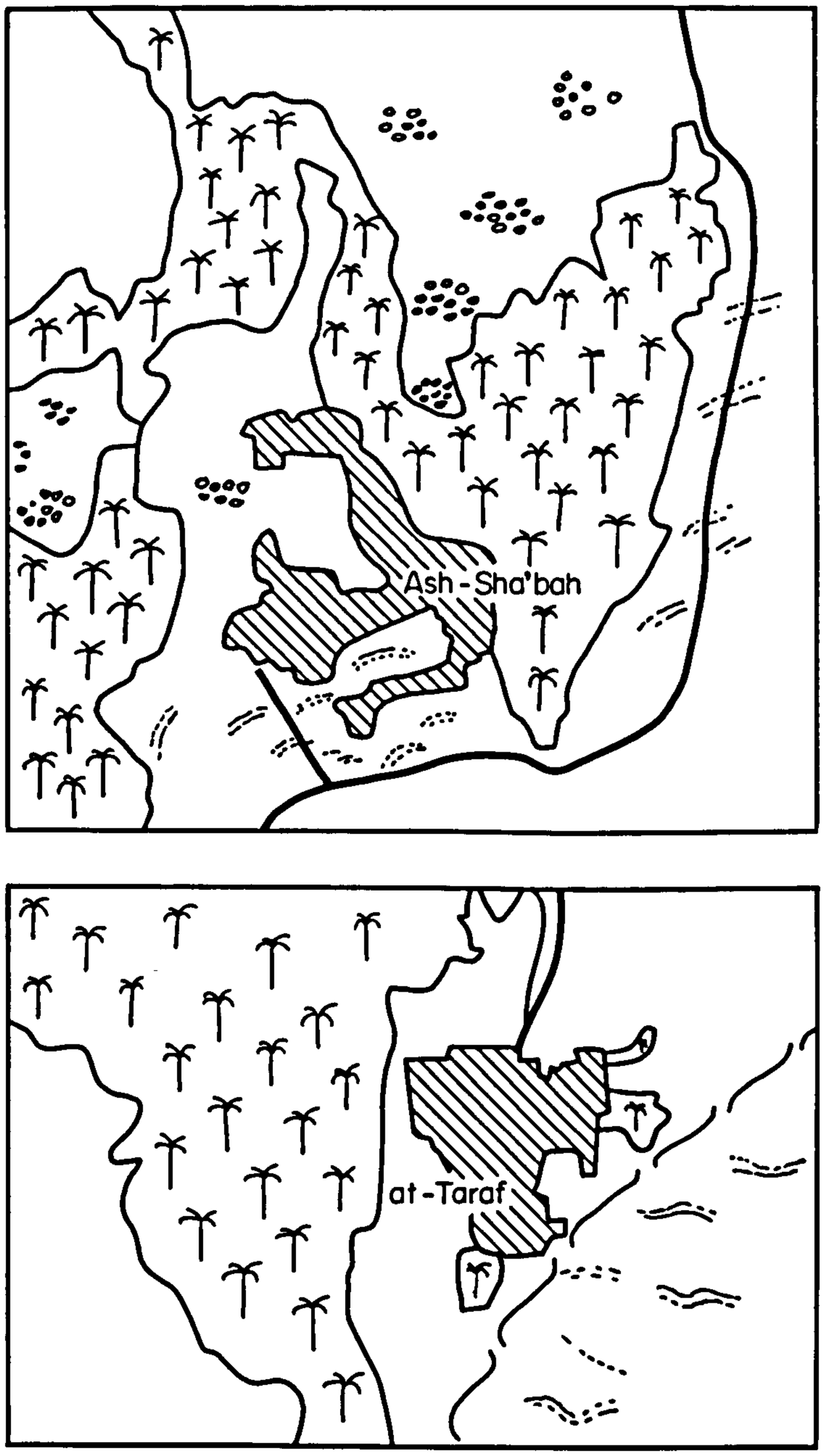
Plate 10.7 Two aerial views showing that al-Mansurah village, which can be seen in the middle of the bottom photograph from 1968, did not exist when the top photograph was taken in 1949. This village has been recently established by people moving from al-Umran region under the threat of sand encroachment upon their settlements in that area

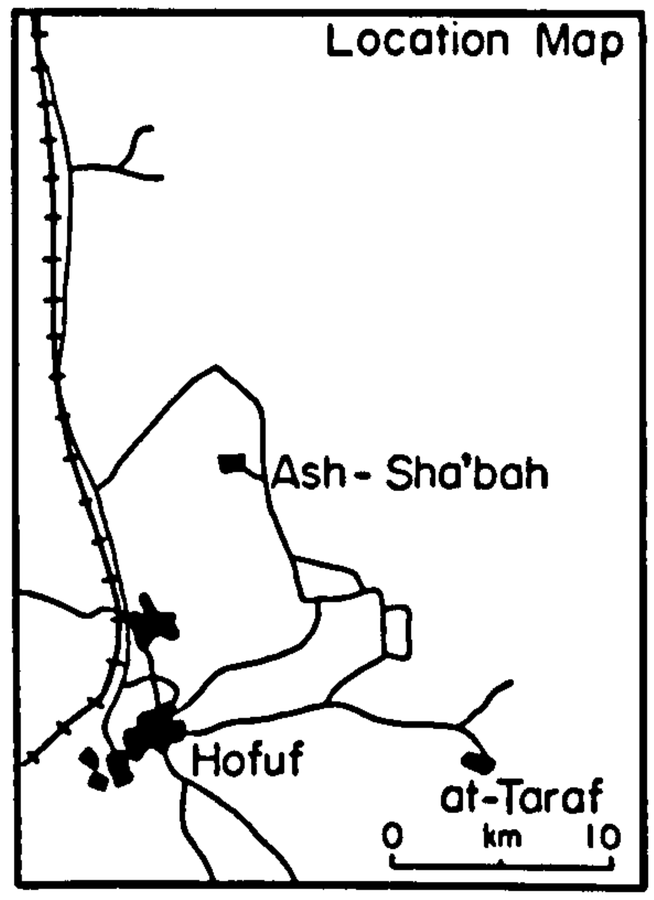
in the areas affected by these phenomena (see the Site Pattern in this Chapter). Indeed the history of the area is full of many stories related to villages buried beneath the sand-dunes in the northern part of the Oasis (see the early part of this Chapter). The memories of the malaria epidemic, among those who used the sabkhas as their habitat, are still remembered in these villages. These experiences were always good reminders to the inhabitants not to build their houses near the source of these dangers. Consequently, the expansion of these villages has often been restricted by the presence and extension of these features. Village expansion instead took place in the opposite direction to these dangerous features. Thus the parts of the villages facing the sand-dunes and the sabkhas are always shorter in length than those located in the opposite sides (Fig .10.4).In this way varieties of shapes emerged in response to the extension of these phenomena and according to the physical morphology of the sites themselves.

The extension of the arable lands surrounding some villages in the area has also influenced the external shape of these villages. The livelihood of the inhabitants of such villages depended largely on cultivating these lands, which were probably too valuable to be covered by the buildings of these villages. Consequently, the built-up areas of such villages became confined only to the available areas on the sites themselves which could not be irrigated because of their higher level. Thus the shape of the villages in such areas took the same extension as the sites themselves. The built-up areas of these villages could not expand beyond the sites because of the restriction provided by the presence of the agricultural land (see Plate 10.1).

The presence of the irrigation and drainage canals which passed near the villages did sometimes contain the extension of these villages and thus influenced their shapes. Indeed, the source of the water supply

The Effect of Sabkhah and Sand Dunes on The Village Shape





Village Area

Agricultural Area

Sabkhah

Sand dunes

Sand Front

Road

N

0 km 10

Fig. 10·4

for domestic use also attracted the expansion of the built-up areas of the villages towards them.

The ethnic and sectarian composition of the population of some of the villages has also affected the forms of the villages. Villages inhabited by a certain clan or religious sect would often grow in a more systematic form than if they were inhabited by different clans or sects. Many mixed villages often took unaccounted different forms for the purpose of ensuring the safety of the different communities in times of disturbance.

The interaction between the various elements already discussed and others would produce the ideal shape of the village. This would finally be balanced against other elements, such as security, water supply, the need to work daily in the fields and access to other settlements.

From observations in the area, one could generalise that the ideal shape for an Al-Hasa village would be a rounded one in which houses clustered round narrow lanes.

Similarly, the internal structure and form of the village had also been affected and shaped by some functions of the village community.

Firstly, the social functions of each village required the houses to be in close proximity to each other, since each village community was considered as one large household and shared many common events. Secondly, economic factors necessitated the closeness of the houses if their occupants were to save building costs. It was found that neighbours usually share the expenses for the construction of the walls which separated their houses from each other. This practice would enable close neighbours to share these walls for the support of their roofs. This sort of the co-operation between neighbours would save each one as much as half the cost of the actual wall construction.

Thirdly, the compactness of the village and the closeness of the

houses made defense of the village much easier by reducing the area to be defended by each man.

The typical house in Al-Hasa village took the rectangular or square shape and was always built round a haush or courtyard, according to the principals explained in Chapter 9, but in a simple form. Its construction was simple and its structure meant that it was originally built for shelter and privacy and very little was given to the internal details shown in the town house in Chapter 9. Houses sometimes consisted of two storeys in the larger villages, such as al-Jishshah and at-Taraf, and one storey in the smaller ones, such as al-Miqdam, ash-Shaharin and as-Sabat. All the houses in the hamlets inhabited by the labourers consisted of one floor and were mostly of palm thatch.

Generally, the houses in the villages were built of sun-dried bricks made from the local creamy clay. However, in a number of villages such as al-Jishshah and at-Taraf limestone was the popular material.[33] The smaller villages and hamlets located inside the date-gardens belt usually used palm-thatch in the construction of their houses. Such villages are often indistinguishable from the air from the surrounding date gardens. Al-Aqar village is a typical example of such a village.

Decoration was rarely found in the typical Al-Hasa village, but if found it would be confined mostly to the sitting room. Apart from this the rest of the house sometimes lacked even white-wash and showed instead the original colour of the parent materials.

As in Assarah village described by Mughram[34] some houses in Al-Hasa villages have been observed with what he called 'open-ended structure'. This is probably because of the closer ties between the members of the village community. The head of the household is usually respected by all members of the household and thus was, and in fact still is, responsible for caring for those who were in need of help from among his re-

latives. Consequently, the open-ended structure in some of the houses in the villages in the area was usually transformed into additional rooms or even new houses to provide accommodation for the elderly relatives or to house newly married sons. In this case Al-Hasa village expanded in an organic way. The new buildings were always expanded and annexed to some of the old structures and at the same time they kept in their structures the same 'open-ended' principle which would be used again for the future annexation of more buildings as the need arose . The inheritance of this practice from one generation to another has led to the emergence of joined agglomerations of houses which expanded in an unplanned way. In fact planning in the present sense, was completely absent in the buildings and expansion of Al-Hasa villages. Oral planning was carried out on the site itself by the builder and the owner of the house who collectively decided where and how to build such a house. According to some discussions held with some of those who practiced house-oonstruction twenty or thirty years ago, the oral plan of building a house was influenced by many factors. These factors were often summarized in the family size, water supply and farm locations, access to roads, the physical condition of the site itself, wind direction, type of construction materials, the need for privacy and security, economic and social status, individual tastes...etc.

Houses were often clustered round narrow lanes which stretched throughout the village. The extension of such lanes in the village was often influenced by the same elements discussed in Chapter 9. One could add here that access to the farms was a very important factor influencing the orientation of the village lanes, as was the source of the water supply.

Unlike the many functions performed by the common Middle Eastern towns (Chapter 3) and in particular the towns of the Oasis itself (Chapter 9),

the number of functions in the Oasis village were few and accordingly the internal structure of each village was simple. In this respect the village function and structure here was similar to the common village in Saudi Arabia[35] and other villages of the Middle East described by Nieuwenhuijze[36], Miller[37] and Tannous.[38] Commerce and crafts were not practiced in any specialized way in Al-Hasa villages. Consequently, there were no business districts in the internal structure of the village nor were there structural buildings for them. The internal structures of the area's villages consisted mostly of houses built along the narrow lanes which connected together the different parts of the village.

The most interesting public buildings in the villages were, and indeed still are, the mosque and the Husainyah. Mosques and Husainyah usually occupy certain strategic locations in the villages near the majority of the houses. Both of these establishments have religious as well as educational functions for the village community. Mosques exist in all the villages of the area but Husainyahs are confined to the Shii'a villages or the parts of the Sunna villages which are occupied by the Shii'a sect followers. Husainyah is usually reserved for celebrating certain religious festivals dictated by the rules of the Shii'a sect. Sometimes the Shii'a community affairs are also discussed here.

The structure of the mosque and the Husainyah in these villages does not differ greatly from the average house in the village. It consists mostly of a square or rectangular shape, half of the structure roofed to be used during the winter and the rainy season and the other half left open for use during the hot season, through which light and air could penetrate to the different parts of these buildings. Some of the mosques have minarets which may be seen from a distance. In other cases the mosques lack this feature and in this respect they could not

even be distinguished from the surrounding houses and are exactly similar to the Husainyahs which have no minarets.

It appears that some villages in the area reserve a space inside the village in which the inhabitants of each village gathered to celebrate certain occasions such as marriage. Such spaces were often called Mahal ar-Raqs or dancing places. Indeed some of these spaces can be observed in the heart of these villages from the air.

In common with the Oasis towns, described in Chapter 9, some of the villages in the area were surrounded by mud walls for protection. Indeed, Philby[39] and Vidal[40] reported a dozen walled villages in the area, such as al-Jishshah, al-Jafr and at-Taraf, al-Fudhul, al-Qarah, al-Uyun...etc. Such walled villages were mostly located at the marginal areas of the Oasis facing the desert. Some other villages such as as-Sabat joined the back walls of their houses to form a wall for protection. In two cases it was found at al-Uyun and al-Markaz, that villages even had moats filled with water as additional defensive obstacles against attackers.[41] Villages located on the slope of Jabal Qarah had been protected from one side by the rugged rocks of the Jabal and from the other side by deliberately built walls.

Each walled village in the area had a number of gates providing the only means of entering or leaving the village. Gates were often built in the direction frequently used by the inhabitants such as towards the fields, water supply and sometimes in the direction of the trade route, as in al-Jishshah, al-Jafr and at-Taraf which were located on the two branches of the old trade route of Tariq as-Sultan (Sultan Roate) between the Arabian Gulf and Central Arabia. Access to other villages did sometimes influence the construction of the village gates in their direction. Gate-names often reflected the directions in which these gates were located, such as the northern gate, the southern gate, the eastern gate

and the western gate.

However, the inner villages which are located inside the date-garden belt such as al-Battalyah, al-Jubail and a dozen more in the al-Umran district, were completely unwalled. They used the thick date-gardens which surrounded these villages to provide the necessary protection during the insecure days of the past.

As in the towns, discussed in chapter 9, the cemeteries were always located outside the village wall on a well drained patch of land near the gates. Some of the Shii'a villages, which were close together, established their cemeteries in central areas between two or even three villages.

One of the common features of the typical Al-Hasa village was, and sometimes remains, the existence of heaps of animal manure in many places inside and outside the village borders. This manure used to be accumulated by the village to be used as fertilizer in the nearby fields where it could be carried out easily and cheaply in the times of need.

The second feature is the presence of spaces inside or outside the village walls on which public markets are still held on certain days in the week. However, this feature is confined only to some villages as will be seen in chapter 12.

The third feature in Al-Hasa villages is the 'Id prayer site which is usually located outside the village wall mostly on levelled land. It consists of a large space which is used only twice a year for the prayers of 'Id al-Fitr and 'Id al-Haj. However, such a feature is confined to villages which have large populations such as, for example, al-Jishshah village. Many smaller villages often share one such site located within walking distance of these villages.

Thus it can be concluded here that village form and structure was, and indeed still is to some extent influenced by many physical and human

elements which interacted with each other to produce the final shape. The village shape of the area is usually characterised by its utilitarian nature which has always been imposed by the environment in which the village is located. Villagers have always struggled to satisfy their essential needs. The danger of the sand-dunes, the Sabkhas and the physical morphology of the site itself has always played a role in the expansion or contraction of the village built-up area and influenced its shape. Indeed, the physical morphology of the village site also affected in a clearer way the vertical level of some villages

located on the slope of Jabal Qarah. The houses of such villages look from a distance to be of different heights as one looks towards the top of the Jabal slope, although these houses were of identical construction. In fact closer examination of such houses revealed that the height of the adjacent houses increased by almost 60 centimetres as one ascends the slope. This category is represented only by the four villages located on the margin of Jabal Qarah, the rest of the villages have a horizontal appearance where the top floors of similar houses stand on the same level.

In both cases the vertical or the horizontal level of these villages reflects the general morphology of the sites themselves. It might be added that houses in the villages were built only for shelter and privacy and luxurious buildings were completely absent. Personal prestige in the village houses did not manifest itself in village structure nor in its form as was the case in the towns (see Chapters 3 and 9).

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PART FOUR

THE IMPACT OF OIL ON THE ECONOMY

CHAPTER 11

OIL ACTIVITIES, MIGRATION AND THE TRADITIONAL ECONOMY

11.1 Prologue: Economic Condition

During the early 1930's the revenue of Saudi Arabia was mostly from foreign Moslem pilgrims who visited the holy places at Mecca and Medina. This, together with other revenues drawn partly from high import duties and partly from Zakat (religious tax), constituted a total governmental income of about £4 million annually. When the world-wide economic recession took effect in 1931, the number of pilgrims was greatly reduced, and it was in this way that Saudi Arabia felt the effect of this world crisis. This was coupled with a heavy drain on financial resources to meet the expenditure required for the war with Yemen (1932), so that the Minister of Finance was only able to balance his budget by borrowing from merchants, and by paying salaries to governmental officials in arrears.

Much less information is available about the sources from which the rural population obtained their income at this time. In general, the people of the Eastern Province depended largely on the cultivation of dates. It is estimated that Al-Hasa Oasis contained no less than two million date trees,[1] while Dammam and Al-Khobar were just fishing villages supplying fish to the area. In Nejd (central Saudi Arabia), the husbandry of sheep, horses, camels and some date cultivation were the means of livelihood for the inhabitants of that part of the country. Hijaz (eastern Saudi Arabia) was considered by far the richest area owing to the resources drawn from foreign Moslem pilgrims.

11.2 The Early Impact on the Oasis

This was the picture of Saudi Arabia at the time the oil concession was concluded in 1933 with the Standard Oil Company of California, known since 1944 as the Arabian American Oil Company, or ARAMCO.[2] Although the agreement was signed in 1933 for oil exploration in the Eastern Province, it was not until 1938 that oil was found in commercial

quantities near Damman village, which is 159 km. from Al-Hasa Oasis. This latter date, however, marked the start of an era of transformation in the history of Saudi Arabia. From 1938 the financial conditions of the government started to improve year by year through the new income from oil exports (Table 11.1),so that the financial difficulties experienced before the oil era were completely over. The beginning of the oil industry in the country, however, has not only improved the financial condition of the government, but has also opened, for the first time, numerous employment opportunities in the public sector, either directly through employment in the oil industry itself, or indirectly through government expenditure. The latter expenditure has indeed created even more employment opportunities than the oil industry itself, but in either case the money has come from oil. Furthermore, the oil industry has stimulated activities in the Eastern Province where oil was discovered. On the national level the government became able for the first time in its history to launch useful programmes for the development of the country. Need, coupled with a great drive for improvement, would perhaps have stimulated other means that could also have led to a much better standard of living. Oil income has nevertheless produced, at high speed, changes which could only have occurred rather slowly in its absence.

The impact of the oil boom is most readily apparent in the oil centres in the Eastern Province. Here the oil company has its offices and workshops, and employs a large staff, both local and foreign. New hotels are being built, and other businesses have grown as a result of petroleum activity. Purchasing power is concentrated here, and the sharp rise in prices, particularly in the case of goods and services consumed by foreigners and the wealthy Saudi, is most strongly felt. Here the mushrooming shanty-towns which grew round the oil centres are

TABLE 11.1

Saudi Arabia's Revenue from Oil since 1938

Year	Production (million barrels)	Revenue (million US$)	Annual % Change
1938	0.5	0.1	
1939	3.9	1.8	1,700.0
1940	5.1	1.2	-33.3
1941	4.3	1.0	-16.7
1942	4.5	1.1	10.0
1943	4.9	1.2	9.1
1944	7.8	6.8	466.7
1945	21.3	4.3	-36.8
1946	59.9	12.0	179.0
1947	89.9	18.0	50.0
1948	142.9	52.5	191.7
1949	174.0	39.2	-25.3
1950	199.5	56.7	45.0
1951	278.0	110.0	94.0
1952	301.9	212.2	92.9
1953	308.3	169.8	-20.0
1954	350.8	236.3	39.2
1955	356.6	340.8	44.2
1956	366.7	290.2	-14.8
1957	373.7	296.3	2.1
1958	385.2	297.6	0.4
1959	421.0	313.1	5.2
1960	481.3	333.7	6.5
1961	450.7	377.6	11.9
1962	599.7	409.7	8.0
1963	651.8	607.7	48.3
1964	694.3	523.2	-13.9
1965	804.8	662.6	26.6
1966	950.0	789.7	19.2
1967	1,023.8	909.1	15.1
1968	1,114.1	926.8	1.9
1969	1,173.8	949.0	2.4
1970	1,386.3	1,214.0	27.9
1971	1,740.8	1,884.9	55.3
1972	2,201.8	2,734.1	45.0
1973	2,772.7	4,330.9	58.4
1974	3,095.1	22,573.5	421.2

Source: Saudi Arabian Monetary Agency (1960-1975)[3]
Issawi (1962)[4]

a bleak reminder that many problems have also been introduced into the Eastern Province along with the introduction of oil, problems which oil by itself will not solve.

Al-Hasa Oasis, which is located at some distance from the oil headquarters at Dhahran, has also been affected directly or indirectly by the oil strikes in the Eastern Province. Unfortunately, these effects are not always for the better.

As noted elsewhere in this thesis, Al-Hasa Oasis has probably, throughout history, been the most important centre in Eastern Arabia, and has dominated the other centres in this area (see Chapter 8 and 9). Sub-centres and villages in other parts of the region were of little importance until the discovery of oil in the 1930's focused urbanisation primarily in the oil centres in the northern part of the region, thus depriving the Oasis of its former importance. Thus the position of the Oasis has been challenged for the first time by the activity in the oil centres.

The early exploration for oil in places distant from Al-Hasa has severely shaken the whole pattern of life in the Oasis, not only economically, but by bringing with it the western way of life. The economic superiority of the Oasis, which had been based on date cultivation and trade, was challenged in the 1940's and 1950's by newly-emerged areas as a result of the discovery of oil there. Al-Hasa Oasis was stripped of its long domination over other areas in the region and the centre of gravity started to shift away from the Oasis to the centre of oil activities in other parts of the Eastern Province. This shifting of power was openly acknowledged in 1953 by the removal of the capital of the Eastern Province from Hofuf (the main centre in the Oasis) to Dammam, where oil was first discovered in 1938.

The removal of the regional capital from Hofuf to Dammam will

certainly have some effects on the administration of the Oasis and the growth of its settlements. In the past, regional and provincial matters were concentrated in Hofuf so that all the wealth from the different parts of the Eastern Province flowed to the main capital of the Oasis. The existence of the provincial court, the administrative offices, the wholesale traders and the residence of the Amir always helped to keep the growth of the town above the local standard in the region as a whole, so that the relationship of Hofuf to the Eastern Province before 1953 was exactly that of Riyadh to the whole of Saudi Arabia at the present time.

If this picture was true in the early 1930's, it is certainly not so nowadays. The early oil activities in the region led to the establishment of completely new settlements in the areas unknown before, such as Dammam, Al-Khobar, Dhahran, Abqaiq, Rahima, and Ras Tanura, together with six new settlements along the Trans-Arabian Pipeline in northern Saudi Arabia (for details, see the second part of Chapter 4).

These new settlements have attracted a large population from the old existing communities, such as Al-Hasa Oasis, to work directly or indirectly in the newly-established oil industry. Dammam rose from being a small fishing village in the 1930's to become a large town with an estimated 55,000 inhabitants in 1973,[5] whilst Al-Khobar grew from a mere hamlet of fishermen just before the discovery of oil to become the largest commercial retail centre in the whole of eastern Saudi Arabia, with a population exceeding 45,000 in 1964.[6] Furthermore, Dhahran was created from just a tent camp (field camp) in 1936 to become the headquarters of the oil company, with an international airport and highways connecting it with the surrounding settlements.[7] Abqaiq, Rahima and Ras Tanura grew from nothing in the 1950's to considerable towns at the present time. Each of these towns, however, has a western touch, and, in

the words of Cressey, "Dhahran is a bit of America dropped down in the desert ".[8]

11.3 Migration to the oil centres

Unfortunately, we cannot trace precisely the former localities of those who settled in the newly-established oil settlements, for the official census, held for the first time in 1962-63 has never been published and has still not been officially released. But the Aramco census of its employees revealed that 61% of the national employees came from the old communities in the Eastern Province, and more than 45% of them came from Al-Hasa Oasis alone, as is illustrated in Table 11.2.

The Table, however, gives only the number of employees from Al-Hasa Oasis directly involved in the oil industry. Those who found their way from the Oasis to the oil centres to work indirectly in the oil industry have not been recorded for the reason mentioned previously. However, during September 1975 the author was able to conduct a sample survey in the three oil towns of Dammam, Al-Khobar and Abqaiq to investigate mainly the following points:

(1) The original home of the inhabitants of the oil towns.

(2) Why those who came, originally, from Al-Hasa Oasis had left their villages or towns to come to Dammam, Al-Khobar or Abqaiq.

(3) How the immigrants from the Oasis select the place to which they migrate.

(4) To what extent they keep strong connections with their original localities in the Oasis and how.

(5) To what extent they consider themselves to be permanent residents in the oil towns or whether they plan to return to their old localities in the Oasis.

Although many other points such as size of family, income, etc., would have been relevant and useful to this survey, it has been impossible

TABLE 1:1.2

Aramco Saudi Arabian Employees from the Eastern Province[9]

Birthplace	Number of Employees	Percentage
Al-Hasa Oasis	3,827	45.8
Dammam	194	2.3
Al-Khobar	84	1.0
Qatif	1,840	22.0
Syhat	739	8.8
Safwa	287	3.4
Tarut	330	3.9
Jubail	356	4.3
Other Eastern Provinces	698	8.4
TOTAL	8,355	100.0

Note: This Table does not include the 5,177 employees from other parts of Saudi Arabia

to include them, as a thorough investigation was not possible in the time available.

The reason for carrying out this survey in these towns is that, these are the major oil towns in the Eastern part of Saudi Arabia, established recently as a result of oil activities in this area. Directly or indirectly, the oil activities in or near these centres have been largely responsible for creating increased employment opportunities. Consequently, these towns have attracted immigrants not only from Al-Hasa Oasis but also from other parts of Saudi Arabia and the World beyond, mainly the Middle East. The fact that the population of these towns is almost entirely immigrant makes them particularly suitable for study.

It should be emphasised that the size and design of the survey has been largely influenced by the limitations of time. In fact, this survey was not carried out during the planned field work of 1972-73, but is a supplementary survey executed during a short visit to Saudi Arabia, in order to check on some shortcomings in the previous field work.

Although these circumstances were not ideal for survey work, there is however a fair indication of population movement between Al-Hasa Oasis and the newly established oil centres of Eastern Saudi Arabia, and our understanding of the immigration process between the two areas can be extended.

The sample size chosen is 675 which represents almost 1.0% of the population of these towns. It has been calculated on the basis of the 1962-63 census.* After taking into account the non-valid responses and the applications which have not been received back, it was found that the sample size had been reduced to only 560 which represents almost

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* Information relating to the population of Dammam (35,408), Al-Khobar (23,492) and Abqaiq (8,719) has been obtained through private communication. The census itself has not been officially approved.

83.0% of the original sample, which is the valid one for the final analysis.

The first point revealed in the analysis of this survey is that all the population of the sample are immigrant or born to immigrant parents. They came to these towns mostly from the Eastern Province of Saudi Arabia (55.6%), other parts of Saudi Arabia (35.8%) and from outside Saudi Arabia (8.6%) as shown in Table 11.3. It also revealed that more than 34.5% of the first category came originally from Al-Hasa Oasis (Figs.11.1 and 11.2).

Table 11.4 indicates that 91.5% of the sample population were born outside the three towns of Dammam, Al-Khobar and Abqaiq. Those who were born in these towns represent only 8.5% of the population and they were born of immigrant parents for whom these towns were not the place of family origin. This confirms that the three towns of Dammam, Al-Khobar and Abqaiq have been recently established or developed in the Eastern Province of Saudi Arabia as a result of oil discovery and exploitation in this area. These towns became the prime targets of all immigrants because of the employment opportunities provided either directly by the oil industry itself, or indirectly because of other services required by a rapidly developing area.

Table 11.5 shows that 89.8% of the immigrants from Al-Hasa Oasis went to the oil towns because they had either been offered jobs or hoped to find jobs there. From observations in the oil centres and the study area itself, it can be estimated that at least 12 thousand Oasis inhabitants have been attracted to the oil centres by the oil industry itself or by the economic boom generated by the oil activities in these areas.

When these people were asked why they had left their original areas in the Oasis, 82.4% of them gave the low income from agriculture as the prime reason for leaving home (Table 11.6). The general agricultural conditions in the Oasis, before and after the advent of the oil industry

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TABLE 11.3

The Place of Origin of the Immigrants in the Oil Centres

Oil towns	Place of Origin																	
	Al-Hasa Oasis		Qatif Oasis		Other parts of the Eastern Province		Najd		Hijaz		Asir and Tuhamah		Northern area		Others		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Dammam	59	20.0	49	16.6	61	20.7	39	13.2	27	9.2	31	10.5	6	2.0	23	7.8	295	100
Al-Khobar	29	15.0	47	24.4	27	13.9	19	9.8	23	11.9	27	14.0	-	-	21	11.0	193	100
Abqaiq	20	27.8	8	11.0	11	15.3	10	13.9	5	6.9	10	13.9	4	5.6	4	5.6	72	100
Total	108	19.3	104	18.6	99	17.7	68	12.1	55	9.8	68	12.1	10	1.8	48	8.6	560	100

TABLE 11.4

Population Distribution by Birth Place

Dammam		Al-Khobar		Abqaiq		The other parts of the Eastern Province		Outside the Province		Foreign		Total	
No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
24	4.3	16	2.9	7	1.3	264	47.1	201	35.9	48	8.6	560	100

Source: Field work

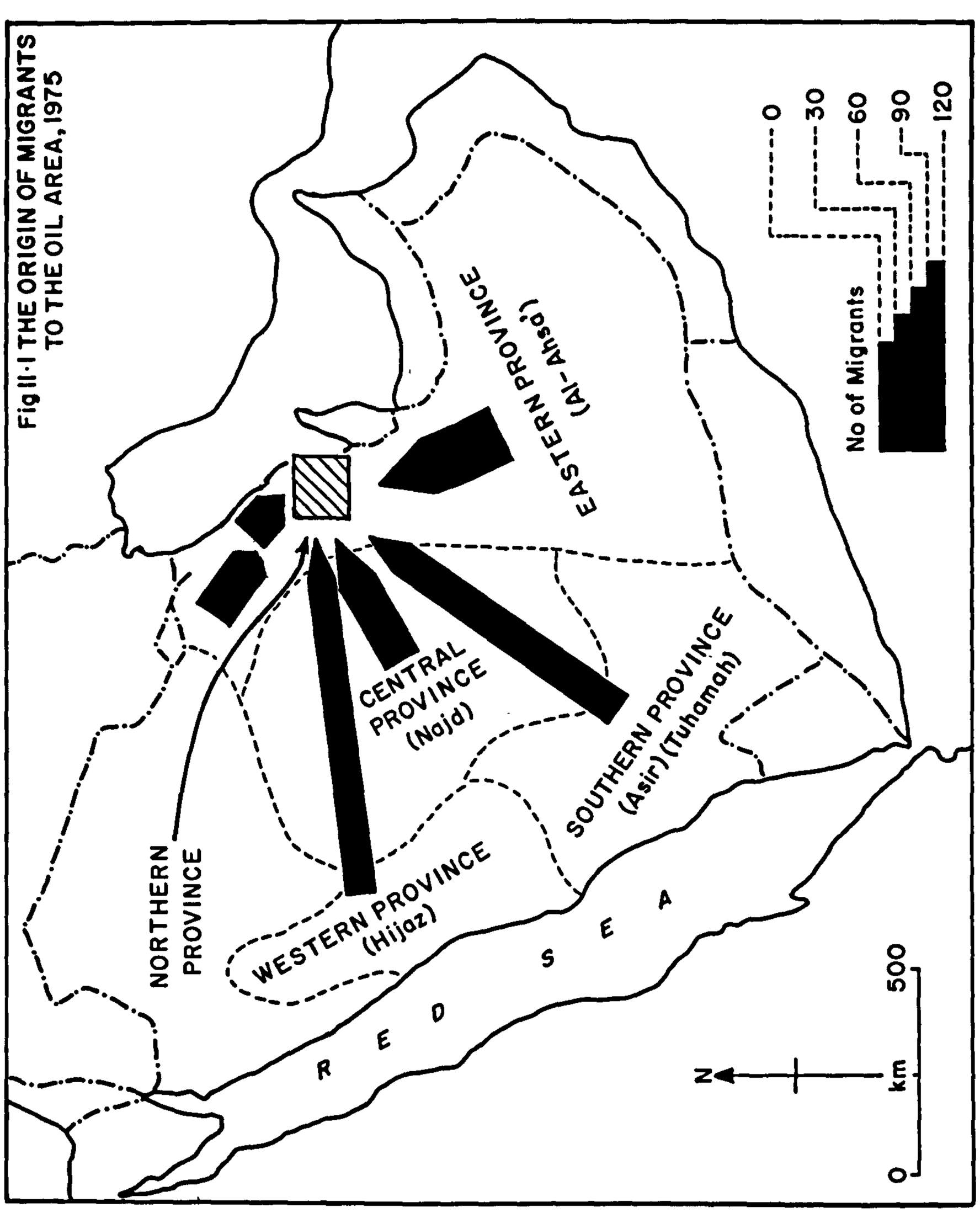
Fig II·1 THE ORIGIN OF MIGRANTS TO THE OIL AREA, 1975
EASTERN PROVINCE (Al-Ahsa')
CENTRAL PROVINCE (Najd)
SOUTHERN PROVINCE (Asir) (Tuhamah)
WESTERN PROVINCE (Hijaz)
NORTHERN PROVINCE
R E D S E A
No of Migrants
0
30
60
90
120
N
0
500
km

Fig 11·2

DIRECTION OF MIGRATION FROM AL-HASA OASIS TO SELECTED OIL CENTRES 1975

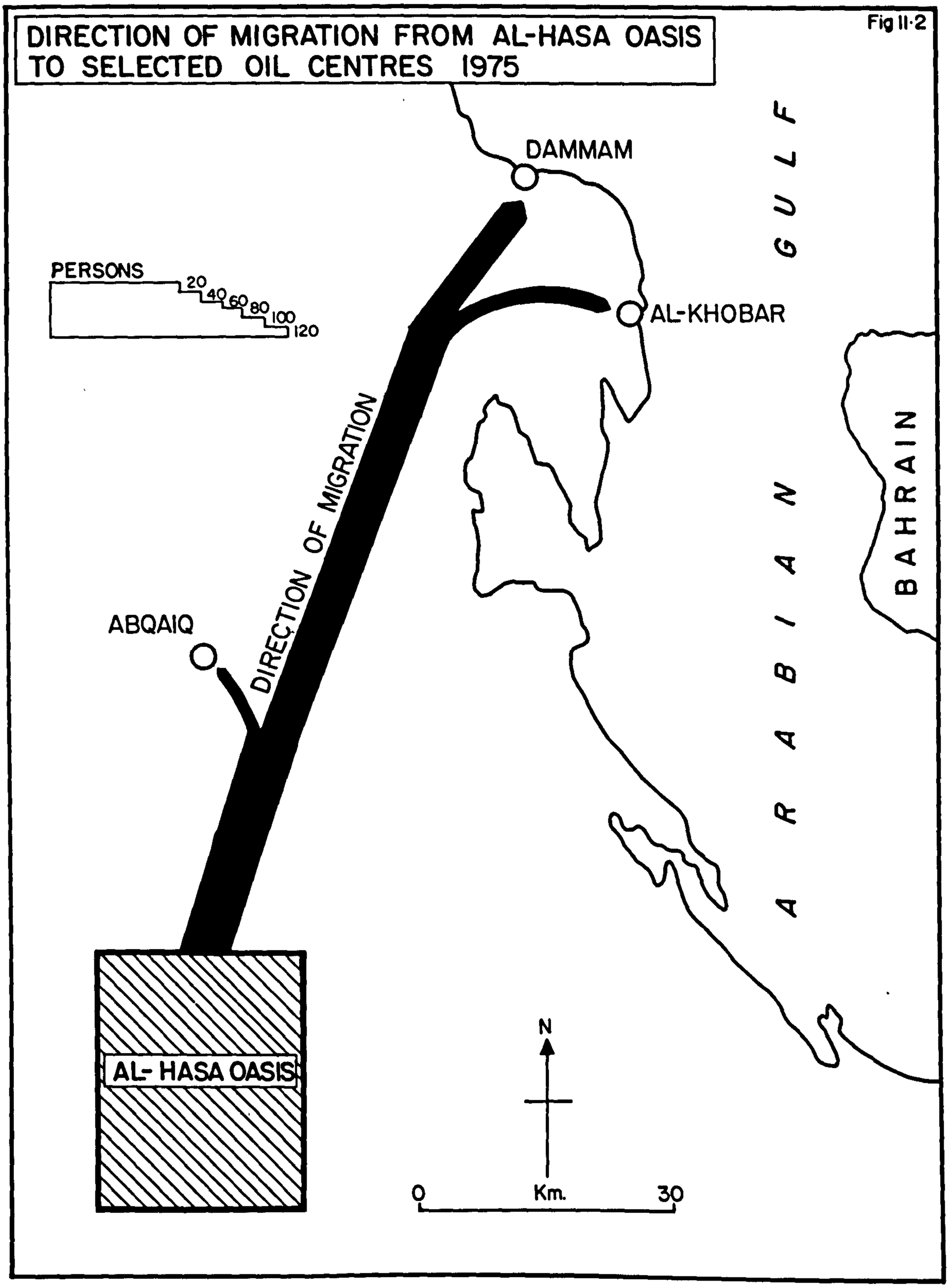

TABLE 11.5

The reasons for immigration to the oil centres

Offered a job		Looking for a job		Moved or started a business		Family reason		Other		Total	
No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
44	40.7	53	49.1	6	5.6	1	0.9	4	3.7	108	100

TABLE 11.6

The reasons for leaving the Al-Hasa area

Low income from agriculture		Gardens affected by sand and salinity		Poor living conditions		Others		Total	
No.	%	No.	%	No.	%	No.	%	No.	%
89	82.4	11	10.2	5	4.6	3	2.8	108	100

Source: field work

in the area will be discussed later in Chapter 11.

When the immigrants leave their localities, they often choose to go to the largest town in the oil area (Table 11.7). This is probably because:

(1) The chance of finding a job is greater in the larger towns than it is in the smaller ones.

(2) The lure of the big cities, in terms of public services, facilities, amusements and others, is so strong that it attracts the largest number of Al-Hasa immigrants. This is evident from Table 13 which shows 54.6% of all Al-Hasa immigrants went to Dammam, the largest oil town in the area and the new administrative capital of the Eastern Province of Saudi Arabia. Only 26.9% of all immigrants went to Al-Khobar, the second largest oil town, and only 18.5% went to Abqaiq the smallest oil town, though it is the nearest to Al-Hasa Oasis.

The presence of a relative or an acquaintance in any single town in the area also influences the immigrants to go there. 28.7% of the Oasis immigrants choose their destinations on this basis. In doing so they probably hope to get some sort of help in either finding a job or accommodation, in getting to know the town and finding companionship while they are away from home.

16.7% of the Oasis sample population chose to emigrate to the nearest oil town and this group of people often have obligations towards their families, their properties or even their communities. They choose to emigrate to the nearest oil town because this enables them to make frequent, weekly or monthly, visits to their original areas in the Oasis in order to carry out their obligations, a subject which is dealt with later in this chapter. Indeed, this intention is reflected in Table 11.3which shows the Oasis community in Abqaiq town (the nearest town to the Oasis) as the largest immigrant community in that town.

TABLE 11.7

Prime considerations in chosing the town to which to emigrate

The nearest to the original area		The largest oil town		The presence of a relative or an acquaintance in the town		Others		Total	
No.	%	No.	%	No.	%	No.	%	No.	%
18	16.7	46	42.6	31	28.7	3	12.0	108	100

Source: field work

More than 36.0% of the immigrants often find jobs in government services (Table11.8),while the oil industry itself absorbs about 31.5% of them. These two sectors are the largest employers in the oil towns. After them come private enterprises which employ about 27.8% of the immigrants.

TABLE 11.8

Distribution of Immigrants according to their occupations

The Oil Company		The Government Services		Private Enterprise		Self Employed		Total	
No.	%	No.	%	No.	%	No.	%	No.	%
34	31.5	39	36.1	30	27.8	5	4.6	108	100

Source: Field work

In both cases employment has been provided directly or indirectly by oil money. The success of private enterprise is very likely to be the result of oil money having been injected by the government or the oil company into the economy of these towns.

The self-employed from Al-Hasa Oasis represent only a small minority (4.6%). This is probably because the bulk of the immigrants came from the poor rural areas of the Oasis lacking both the capital and the experience required for starting or running a private business.

Table 11.9 shows that all immigrants keep strong ties with their original area through irregular remittance of money and irregular visits which are made from their places of work in the oil towns to their homes in the Oasis. It has been found that 3.7% of the immigrants keep contact with their original areas in this way. Those who do not remit money at all but pay either regular weekly or monthly visits, represent almost 13.0% of all immigrants. 78.5% of this category make the visits on a weekly basis and only 21.5% of them visit their area each month.

TABLE 11.9

Immigrants contact with their original areas in Al-Hasa Oasis

Irregular remittance and visits		Regular visits only						Irregular remittance but regular visits						Irregular visits but regular remittance						Total	
No.	%	Weekly		Monthly		Yearly		Weekly		Monthly		Yearly		Weekly		Monthly		Yearly		No.	%
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
4	3.7	11	10.2	3	2.8	-	-	46	42.6	32	29.6	-	-	-	-	9	8.3	3	2.8	108	100

Source: Field work

The largest proportion of the immigrants keep in touch with their areas in the Oasis by both irregular remittance of money and by paying regular weekly or monthly visits. This category includes 72.2% of all the immigrants from the Al-Hasa area, of whom 59.0% visit their areas each week byt 41.0% pay monthly visits.

Lastly, 11.1% of the immigrants keep in touch with their areas in the Oasis through irregular visits but remit regular money. 75.0% of this group make remittance to their areas on a monthly basis and only 25.0% of them remit money each year.

The most interesting point in this Table is that almost 52.8% of all immigrants visit their areas in the Oasis once a week. This might be explained in terms of the short distance between Al-Hasa Oasis and the oil towns in the north, the longest distance between Hofuf town in the Oasis and Dammam town, one of the main oil centres, being only 159 kilometres, while the shortest one between Al-Uyun village, in the Oasis, and Abqaiq oil town is only 59 kilometres. In addition, the roads between Al-Hasa Oasis and all the oil centres are paved and public transport is available and cheap.* Moreover, Aramco Oil Company works only a five day week** (Saturday-Wednesday) which allows the immigrant enough time to visit his family in the Oasis and return to his place of work. Indeed, Aramco Oil Company runs a regular weekly bus service for its employees between the Oasis and the town. This is an incentive to the immigrant employees from Al-Hasa to make a regular weekly visit home.

Those who visit their localities on a regular weekly basis are, for one reason or another, most likely to keep their families in Al-Hasa Oasis and live as bachelors during the time they are working in the oil towns. Every five days they return home for the weekend and see to their

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*The author paid 10 Saudi Riyals (£1.30) in September 1975 to travel by taxi from Dammam town to Hofuf town. Taxis usually carry four passengers.

**The official working week in Saudi Arabia was six days (Saturday-Thursday) until last October when it was reduced, for the first time, to only five days; this experiment could continue if it succeeds.

affairs. This group do not make regular remittances because they probably bring money for their families with them at the time of their weekly visits. Those who remit money on a monthly or a yearly basis are likely to be those who visit their localities only irregularly and they probably have their families with them in the oil towns. They may of course remit money because of obligations towards either elderly parents or other members of the extended family to whom they feel obliged to offer some financial help. This group consists of only 11.1% of all immigrants.

It is interesting to note that all immigrants have either some member of their families still residing in the Oasis or have properties there, for none of them have answered section B of question 9 in Appendix D. This section was designed to investigate how many immigrants left their areas in the Oasis on a permanent basis.

Table 11.10 shows the future intentions of the immigrants. Seventy one of them or 65.7% intend to settle permanently in the Al-Hasa area while 9.3% (10 immigrants) plan to move away. The group who do not know number 27 or 25.0%.

TABLE 11.10

The Immigrants Plans for the Future

I wish to make my home in Al-Hasa area		I wish to make my home at my place of work		I do not know		Total	
No.	%	No.	%	No.	%	No.	%
71	63.7	10	9.3	27	25.0	108	100

Source: Field work

It appears that the majority of the immigrants intend to settle in Al-Hasa because they have either families or properties or enjoy some sort of social prestige which they do not want to lose. Financial considerations are also important in most cases.It is likely that they possess

neither houses nor building plots in the oil towns and the current land and house prices would be beyond their means.* In fact, the majority of them are farmers who already possess enough land in the Oasis on which to build new houses if they wish.

The group who have plans to move out of the Al-Hasa area to their place of work in the oil towns, consist of only a small minority of the immigrants. It is likely that this group are traders who have no land or property in the Oasis and have already established flourishing businesses or obtained good jobs in oil towns. They have often secured some sort of social respect, which they are anxious not to lose, and have usually secured houses or plots upon which to build should they wish to do so.

Finally, those who do not know, or have not made up their minds about the future constitute the second largest group in the sample. Maybe they have established interests both in the Oasis and in the oil towns but fearing failure in the latter, do not wish to sever their links with the past. On the other hand, they may in fact have made plans for the future but are reticent about disclosing such personal matters to an outsider.

The early days of oil activity in the region created an abundance of employment opportunities for the first time in the history of that area. Labour from Al-Hasa Oasis and other parts of the region was attracted to the oil towns because the oil industry offers wages higher than the local standard, and in cash. In addition, the workers are given free lodgings in company quarters with all amenities attached. They are also given free medical care for themselves and their families. Generally speaking, the workers are given so many privileges that an in-

*In September 1975 the average land price in Dammam town reached 160 Saudi Riyals or £22.9 per sq.metre. To buy a piece of land of 25 x 25 sw. metres, on which one could build a house, it would cost almost a hundred thousand Saudi Riyals or £14,285.70 and by now land prices must have risen even further.

creased number of farmers are attracted to emigrate to the oil centres. In fact, the influx of labour to the oil fields was so intense in the early days of oil that 6,247 employees were registered in 1948 alone.[10] Thus oil activities in the region have led for the first time to the emgerence of a new class of labourer with high purchasing power. This situation has created certain inflationary tendencies, not only in the Oasis economy, but also in the economy of the whole region. It has also set a 'ceiling' for other workers and employees who aspired to acquire the same income and living standards.

All this accounts for the continuous migration from the farms to the oil fields, leaving cultivation in the Oasis short of labour, with only the young and the old left to care for the gardens. It is interesting to note that this migration to the oil fields has significantly affected the local agricultural economy of the Oasis. A glance at the following figures (Table II.11)shows that the oil industry has absorbed the young men who are in their prime.

TABLE 11.11

Age Structure of Aramco Employees[11]
(Natives of Al-Hasa Oasis)

Age Group	Number of Employees	Percentage
16 - 20	490	12.8
21 - 25	1,167	30.5
26 - 30	1,247	32.6
31 - 35	488	12.8

Thus it seems that the oil towns have achieved a tremendous growth at the expense of the old existing communities, especially Al-Hasa Oasis, which has been drained of its old power as a result. While the introduction of the oil industry into the Eastern Province was indeed a great event in the life of the region as a whole, to Al-Hasa Oasis it meant the passing of its power to the new oil towns.

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CHAPTER 12

THE IMPACT OF OIL UPON AGRICULTURE AND LOCAL TRADE AND INDUSTRIES

12.1 Impact on Agriculture

The discovery of oil in the Eastern Province has thus caused great changes in its economy, its settlement pattern and its social life. Unfortunately, this change has not always been for the better. The purpose of this study is not to praise or to condemn oil. It is rather to consider the actual problems caused by the introduction of the oil industry in this traditional region, and its impact upon the economy of an oasis community of the region, in order to find safe solutions to these problems for the future.

One cannot deny that the oil industry has brought with it an immense increase in the national income which has for the first time enabled the government to carry out important and useful projects in the Oasis. But in the early days of the oil industry, the impact on the economy of the Oasis was certainly serious. The migration of farmers to the oil industry was, and still is to a certain extent, the major factor which has led to the decline of the economic status of the agricultural community of the Oasis. Since the introduction of oil in the region, the cultivated lands of the Oasis have been shrinking all the time. The cultivated lands frequently mentioned by travellers such as Zwemer[1] and Lorimer[2] in the first decades of this century are now lying abandoned and barren, despite the availability of enough water for cultivation.

In fact, written sources mentioned that Mubarraz was, as late as the 1920's, enclosed by cultivation on three sides. This town is now surrounded by desert. Rihani[3] reported "Patches of green" between al-Fudhul village and Hofuf which are no longer in existence. As recently as 1951, Vidal reported many abandoned gardens in the Oasis, such as

those east of al-Markaz, west of al-Fudhul and south-west of al-Munayzilah villages.[4] In 1972 the abandoned gardens were a common sight in the Oasis (Plate 12.1).

Apart from the decrease in the general agricultural lands, dates as the main cash crop in the Oasis have certainly suffered from the coming of the oil industry. Pelly mentioned that in his day the export of Khalas dates from Hofuf to India alone was worth 125,000 rupees.[5] Lorimer recorded at the beginning of this century the following figures (Table 12.1)for date export from the Oasis.

TABLE 12.1

Date Export from Hofuf (Al-Hasa Oasis) [6]

Quantity (tons)	Outlet
3,000	To Jeddah via Al-Oqair
5,000	To Bahrain
2,000	To Qatar
1,000	To Jeddah via Bahrain
40,000	To Kuwait, Najd and the surrounding nomads (this figure includes the dates consumed in the Oasis)
51,000 - Total	

These figures indicate the great value of the date trade before the oil era. With the introduction of oil this trade had been reduced, according to a Saudi Customs Report, to only nine tons to Kuwait in 1954.[7] In 1972 a visit was made to the Date Market of Hofuf but no mention was made of dates being exported outside the country, except for a small quantity* sent occasionally to Qatar. Thus it goes without saying that the date as an important cash crop in the Oasis has seriously declined.

*No figures are available to specify these quantities because the traders were not certain of what was bought for local consumption and what for export.

Plate 12.1 Abandoned gardens have become a common sight in Al-Hasa Oasis

This decline, however, could be related mostly to the oil industry, which in the first place attracted the farmers from the date gardens to the oil fields and left gardens short of labourers. Secondly, work in the oil fields brought closer contact between the natives and the different nationalities who also came to work in the oil industry as skilled labourers. This contact gave the natives, who came from the Oasis, experience in tasting different varieties of foods unknown to them before. The newly-acquired experience, together with the increased purchasing power of the labourers, brought a shift in the dietary habits of the inhabitants from dates, the main basic food in the pre-oil era, to imported foreign canned and other kinds of food in the oil era. In 1972, the author was told by a local farmer: "The people [the native inhabitants of the Oasis] are neglecting the date trees. They are planting vegetables because not many people eat dates any more." This shift, indeed, spread quickly from the oil centres to the towns and villages of the Oasis and the other existing communities of the region. Eating foreign foods in the Oasis became fashionable and often implied progressive attitudes.

The shift in the dietary habits has not only affected the dwellers of the Oasis; other parts of Arabia which used to be importers of Al-Hasa dates have had the same experience. Thus, in this way the date has lost its markets, not only inside the Oasis and other parts of Saudi Arabia, but outside the country too. Kuwait, Bahrain and Qatar, which, according to Lorimer,[8] used to be the main importers of Al-Hasa dates, have nowadays ceased importing Al-Hasa dates completely.

It seems that these countries have also been affected by a shift in dietary habits, also brought about by the oil discoveries there, for these have flooded their markets too with different varieties of imported foreign foods.

Thirdly, the only section of the population which continued to regard dates, to some extent, as the main basic food were the Bedouins, who continued their nomadic life in isolation in the desert unaware of the new wealth brought by oil, and unprotected against the inflation it also brought. Thus the date price, which was considered to be too low from the farmers' point of view, was indeed too high for the Bedouins' standard of living. In order to remedy this problem, the government in 1942-43 prohibited the conversion of Qatif dates into Saluq, (boiled dates) which was mainly for export,[9] a measure aimed at bringing down the date price by flooding the markets with a large date surplus, so that the Bedouins could get their basic food at the low price they could afford.

Fourthly, since the introduction of oil, a great deal of cash has been introduced annually into the economy of the country, so that the old habit of paying wages in kind (dates)is no longer acceptable, and all wages must be paid in cash.

These, then, are four considerations, directly or indirectly connected with the introduction of the oil industry into the region, which have resulted in the deterioration of dates as a cash crop and as an item of food. The result has been a sharp decline in the price of dates. "The price of Al-Hasa Quallah (130-140 lbs) of Ruzaiz date went from approximately 50 Saudi Riyals in 1948 to 10 S R in 1951".[10]

This situation, however, suited the Bedouins, who could then buy dates cheaper than ever and sell their animal products dearer than before. In this situation, the farmer became the person most affected economically, not only because the date upon which he depended for his livelihood had collapsed in price, but also because the price of other imported items in the local markets had gone up.

The collapse of the date price has severely reduced the income

of the cultivators, and consequently led to further decreases in date production, for growing dates was no longer profitable. Thus the date production of the Oasis declined from 59,000 tons in 1960[11] to 32,100 tons in 1967.[12]

These trends led to a general hectareage reduction and agricultural contraction in the Oasis. The actual agricultural area of the Oasis was reduced from 16,000 hectares in 1950 to 8,000 hectares in 1967.[13] In only 17 years the Oasis lost 50% of its best agricultural land. This fact has been confirmed by the Minister of Agriculture of Saudi Arabia.[14]

The hectareage reduction in the agricultural lands of the Oasis has occurred not only because many farmers have lost faith in agriculture as a means of livelihood in this era, but also because young men have migrated either to the oil centres or to the towns of the Oasis itself. Supplementary income in these towns has gradually become obtainable from non-agricultural activities. This is rendering farming less essential to many families in the Oasis. Schooling, too, which has spread in the Oasis in the last two decades as a result of the increased oil revenue, has also absorbed the youngsters, firstly taking them from the gardens to the schools in the villages, and later on to government and non-agricultural jobs in the towns (Appendix B).

Sand dune encroachment upon the Oasis should also be considered as one of the causes of the agricultural contraction of the Oasis, but its role should not be overestimated. Each year, according to the Ministry of Agriculture and Water,[15] the Oasis loses 20 Feddans (8.1 hectares) of its arable lands. If, on this basis, we calculate the total area lost by this factor from 1950 to 1967, we find that the loss was 137.7 hectares, or less than 1.7% of the total agricultural hectareage reduction suffered by the Oasis during the same period. Thus the factor of sand encroachment loses its importance if it is compared

with the other factors caused by the introduction of oil into the region.

However, the general reduction in area of the agricultural land of the Oasis has not been accompanied by a similar reduction in the water supply. Hasan reported that surplus water went unheeded to the waste land of the Oasis.[16] This surplus water had not been properly drained out of the garden area, so that many gardens in the Oasis became flooded by the unneeded water, which, by the process of evaporation in the hot season, turned the fertility of the soil into unproductive salinity. Thus many productive gardens have been converted into sabkhas or unproductive swampy lands. When one of the farmers was asked for his opinion of the new Irrigation and Drainage Project, launched in 1967 by the government, the farmer replied, "We are happy about the drainage because we were almost swimming in the field here".[17]

The process discussed above has not only stripped the Oasis of some of its best agricultural land year by year, it has also developed in the extensive swampy areas a breeding ground for malaria epidemics. Consequently a high incidence of malaria has occurred in the Oasis, as indeed described by Daggy.[18] This problem has been aggravated by the 336 wells which were dug as recently as the early 1960's.[19] These wells were, in fact, dug not because of lack of water, but rather to create independence from the traditional obligations of the water distribution schedule which divided water between the landowners according to a fixed timetable. Most of these wells are equipped with pumps which produce more water than is actually needed.

However, once the gravity of the problem was realised the government, working closely with experts from the Aramco Oil Company, determined to stop the deterioration in the agricultural land of the Oasis and the continuous drift of its population towards the oil centres and other towns of Saudi Arabia. This aim has been partially achieved by

several steps. Firstly, by strengthening the agricultural economy of the Oasis through turning the collapsed traditional agricultural economy, already discussed, into a modern, commercial agricultural economy, so that it can fit in with the new pattern of life in the oil era. The aim is (i) to stabilise the agricultural economy of the Oasis and to safeguard the farmer by diversifying his products, so that he will not, in future, fall a victim to crises similar to that caused by oil; (ii) to increase the income of the farmer so that he can live up to his expectations, thus persuading him to stick to his farm and probably attracting back other farmers who had left the Oasis; and (iii) to provide the rapidly expanding population of the towns with a great range of foods.

The introduction of commercial agriculture in the Oasis needed a lot of effort, and more expertise. Scientific agriculture in the Oasis is, indeed, an innovation to many farmers, so the government established an Agricultural Department to provide all the services needed in this transitional period. In addition, an agricultural school was opened in the Oasis as well as a rice experimental farm; at a later date, an Agricultural Research Centre, under the supervision of University College of North Wales, was also established in the Oasis.

In fact, the farmers had long been aware of the danger of becoming dependent on a single crop, because of the crisis brought about by the introduction of oil into the region, so they started, with the help and encouragement of the government, to diversify their agricultural products for commercial markets.

This fact is clearly reflected in the increased hectareage of crops, shown in Table 12.2.However, it should be emphasised that the increase in crop hectareage, does not mean that a new reclaimed area has been added to the old one rather it should be seen in terms of an

TABLE 12.2

Changes in Land Use between 1960 and 1967

Crops	Cropped Area (ha)		% Change
	1960 (1)	1967 (2)	
Tomatoes	81.0	225	177.8
Onions	152.2	212	39.3
Melons	113.9	125	9.7
Pumpkins	26.3	57	116.7
Okra	7.8	117	1,400.0
Eggplant	24.6	95	286.2
Cucumbers	21.4	44	105.6
Lettuce	0.7	31	4,328.5
Others	50.7	144	184.0
Rice	451.6	580	28.4
Alfalfa	1,131.8	1,626	43.7
Total	2,062.0	3,256	57.9

Sources: (1) Ministry of Agriculture and Water[20]

(2) Stanford Research Institute[21]

intensive use of the land already under cultivation. In other words, the existing agricultural land of the Oasis has expanded vertically rather than horizontally without an increase in the actual hectareage of the area. Other crops are planted(beneath the palms) so that the farmer can now get a variety of crops out of the same area of land which used to produce only dates in the pre-oil era.

The above Table shows that within seven years (1960-1967) the crops listed increased by 57.9% in the cultivated areas. It seems that this indicates an increase in demand for vegetables and other crops and reflects the changing dietary habits, already discussed, of the local inhabitants, which were the result of the movement of workers between the Oasis and the oil centres in the north. As mentioned earlier in this chapter, the increased demand for vegetables and other crops has been relatively balanced by the 54.4% drop in date production in the Oasis during the same period. This lack of interest in dates, as the traditional food for many people in the Oasis and the surrounding areas, has in fact, considerably altered the pattern of land use; either the palm-trees are allowed to die and are replaced by vegetable and other crops, or vegetables, rice and alfalfa are planted beneath them. This latter practice is the most common in the Oasis and is responsible for producing the invisible increase in the agricultural hectareage shown in the above table.

The intensive land use has, however, occurred mainly near villages where some of the population are engaged in one way or another in the region's oil industry (Fig.12.1).

Secondly, with the co-operation between the government and Aramco, a sand dune control technique was adopted and the sand encroachment on the Oasis was slowed, then halted, by a project launched in 1382 (1962) whose first stage was finished by 1388 (1968). This project,

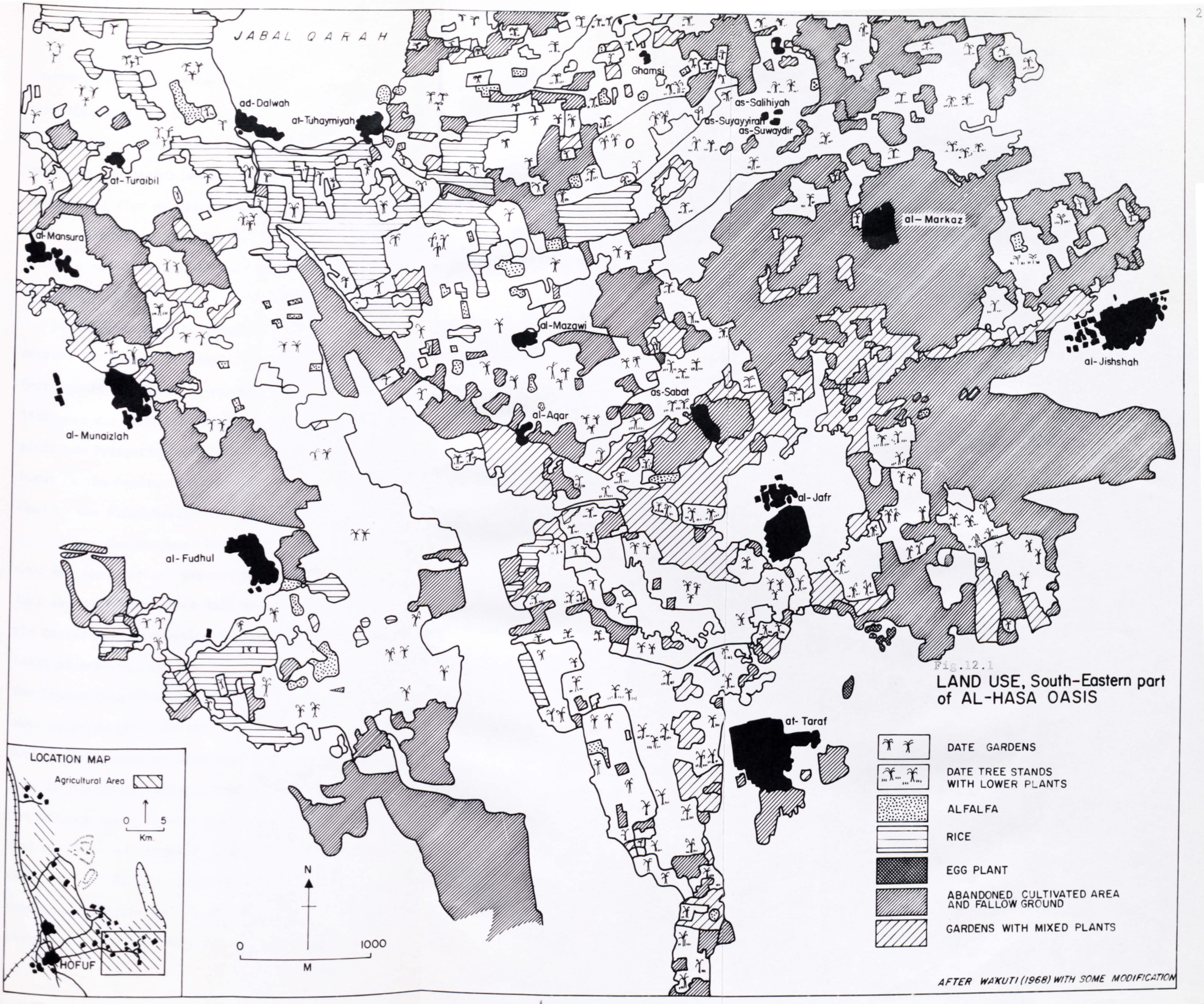

Fig.12.1

LAND USE, South-Eastern part of AL-HASA OASIS

AFTER WAKUTI (1968) WITH SOME MODIFICATION

however, cost the government SR 14,482,942 million (£2,068,992), and took five years to complete.[22]

Thirdly, according to the Ministry of Agriculture,[23] the government of Saudi Arabia made a contract in 1961 with the Swiss Consulting Engineering firm of Wakuti AG to study the problem of drainage in the Oasis. Wakuti recommended the construction of surface and underground drainage channels leading into huge evaporation lakes to solve the drainage problem.[24]

The Saudi Arabian government accepted these recommendations and awarded the costly contract ($51 million) to Philipp Holzman AG, the West German construction company.[25] Work on this project started in 1967, and was completed by 1971, creating proper drainage and a complete new irrigation system for the distribution of water to all the farms in the Oasis. This project has added 12,000 hectates of arable land to the 8,000 hectates already under cultivation in the Oasis.[26]

These two projects have certainly provided a suitable environment for agricultural expansion in the Oasis, but will the farmers who left the Oasis ever come back to cultivate the newly reclaimed land in the Oasis? Unfortunately, it seems that this is not to be expected, at least at present, for the income from agriculture is still less than the income from other occupations. Although there are no figures available to prove this, interviews with some of the farmers during field work (1972), together with close observation of the plight of agriculture in the Oasis, clearly support this claim. During some visits to the project area, a large uncultivated area was noticed near reservoir number two, even though it can be irrigated by gravity from the reservoir. My companion, an agricultural engineer from the Oasis itself, commented that the farmers are intending to sell their land and invest the proceeds in the towns for a better return.

In fact, the farmers of the Oasis do not see their future or the future of their children in agriculture; rather they see it in the town, in government jobs, private jobs, or even trade. The reasons for this can be found in the imbalance between the income from agriculture and from other jobs and occupations in the towns of the Oasis and the other oil centres in the region. To remedy this situation, the farmer must be paid a fair return for his agricultural products, so that he can trust farming as a means of livelihood and the money from oil can be transferred to him through the sale of his products.

Not only has the agricultural economy of the Oasis been adversely affected by the discovery of oil in the region, but livestock has also declined. A glance at Table 12.3 illustrates this fact.

The continuous decline in the quantity of livestock, as shown in the Table, cannot be explained in isolation from the agricultural economy of the area, for livestock has always been treated in the Oasis as an adjunct to agriculture. In fact, animal breeding in the Oasis was not a major occupation as it is for the Bedouins in the surrounding desert, but at the same time it was of major importance to the farmer in the past.

Livestock in the Oasis includes sheep, goats, horses, cows and donkeys. Sheep and goats were not proportionally divided between the villages, but appreciable numbers were found in al-Jishshah, al-Uyun, at-Taraf, ash-Shu'bah, al-Jafr and al-Kilabiyah districts, where probably some sedentary Bedouins live. The decline in the numbers of sheep and goats in the Oasis is the consequence mainly of the oil industry, (as will be discussed later in this chapter) which attracted labourers mostly from these villages (Table 12.4*). Horses were not economically active animals in the Oasis; nevertheless, they were kept by the Amir and the well-to-

This Table shows the number of employees from Al-Hasa Oasis employed in the Aramco Oil Company to be less than the figures quoted in Table 12. This may possibly be explained by the fact that, in its early days, the oil industry needed many workers for construction work but, once this was completed, a reduced work force was required to handle the production operation. Thus, each year the numbers involved directly in the oil industry constantly fell so that while the number of workers in 1954 was 21,858 this was reduced to only 15,657 in 1973** (see references * and ** on p.332)

TABLE 12.3

Livestock in the Oasis

Livestock	Year			
	1908 (1)	1956 (2)	1960 (3)	1967 (4)
Sheep and goats	?	45,000	11,414	2,150
Donkeys	13,000	9,000	4,616	1,740
Cows	15,525	10,000	6,036	8,200
Horses	100	20	9	-
Camels	?	-	297	240

Sources: (1) Lorimer[27] (2) Abul Ela[28]

(3) Ministry of Agriculture and Water[29]

(4) Stanford Research Institute[30]

TABLE 12.4

Distribution of Aramco Employees in Al-Hasa Oasis (1972)

Name of Settlement		No of Employees
Towns:	Hofuf	492
	Mubarraz	526
Villages:	Abu Thur	1
	ad-Dalwah	1
	al-Battaliyah	13
	al-Fudhul	5
	al-Hulailah	45
	al-Jafr	70
	al-Jishshah	188
	al-Jubail	6
	al-Julayjilah	47
	al-Kilabiyah	69
	al-Mansurah	19
	al-Markaz	4
	al-Miqdam	24
	al-Munaizilah	1
	al-Mutairifi	16
	al-Qarah	17
	al-Qarn	4
	al-Qurain	14
	al-Umran al-Janubiyah	5
	al-Umran ash-Shimaliyah	20
	al-Uwaidhiyah	2
	al-Uyun	141
	al-Waziah	3
	ar-Rumailah	11
	ash-Shaharin	2
	ash-Shu'bah	81
	ash-Shuqaiq	31
	as-Sabat	1
	as-Salihiyah	2
	as-Suwaidir	1
	as-Suyayrah	1
	at-Taraf	87
	at-Tuwaithir	12
	Bani Man	1
Total		1,963

Source: Direct communications with the Public Relations Department of the Arabian American Oil Company (ARAMCO), Dhahran, Saudi Arabia

do families of the area for either administrative or prestige purposes.

The introduction to the area of the motor car, brought in by the oil industry in the 1940's, resulted in a decline in the number of horses in the Oasis. Cows had never been used in the agriculture of the Oasis, but were kept mainly for milk by certain families who could afford to feed them. Since imported dried milk became available in the markets of the Oasis, and since the purchasing power of the inhabitants increased dramatically after the discovery of oil in the region, people have changed over to canned milk, for it is cheaper, healthier and more convenient than having a cow in the house. This shift can be traced in the numerous cows brought to Hofuf market for sale in late 1952 and early 1953 compared with the years before.[31] It seems that people recognised that breeding cows for the sake of milk was no longer necessary as it had been before, so they tried to get rid of these animals before they declined in price. This resulted in the gradual decline in the number of cows, as noted previously.

The most important, economically active animal in the Oasis used to be the donkey. The donkeys of the Oasis were referred to as Hasawi and were well known throughout the Middle East for their white colour, their tall shape and muscular build. They are very hardy animals and can do without water for long periods. Before the discovery of oil in the region, donkeys as well as camels used to carry goods and passengers between Al-Oqair on the Arabian Gulf and the Oasis inland across the Jafura Desert.[32] In 1922, Rihani saw donkeys coming from the Oasis to the port of Al-Oqair "carrying bundled forms".[33] Abul-Ela indicated that they performed the journey faster than the camel caravan and could cover the distance between the two points in twelve hours, with only two short halts for food and water, whereas the camel caravan had to halt for a night en route.[34]

Besides their significance in the past as a means of transport between the Oasis and some of the surrounding areas, they were the only means of transport between the villages and the towns of the Oasis, between the villages themselves and between the villages and the farms. Generally speaking, donkeys were so important that both farmers and traders could not do without them.

The introduction of oil has changed all this. When cars were introduced to the Oasis, donkeys began to be neglected. Unfortunately, it is not known when cars were first introduced to the area, but they were certainly not used in large numbers before the 1950's.

However, the economic impact upon the farmers who had not participated directly or indirectly in the oil industry or in government services was indeed serious, and their income had been reduced, as we have seen earlier in this chapter. In fact, they were not financially in a position to buy these expensive cars for their daily use on the farm. Instead, the introduction of car tyres made it possible for them to build an efficient donkey-cart for much less than the price of a car. On the other hand, those who dealt directly or indirectly in oil were able to buy these expensive cars. Thus donkeys obviously declined in importance due to the introduction of cars through the advent of the oil industry in the region. This decline is further evidenced in the declining number (see Table 12.3) and price of these animals, as illustrated in Table 12.5.

TABLE 12.5

The Declining Price of Donkeys in Al-Hasa Oasis

Year	Estimated Price of one Al-Hasa Donkey	Source
1930	150 gold pounds	Rihani,[35]
1942-44	1,500 Saudi Riyal	Vidal,[36]
1954	500 - 600 S R	Vidal,[37]
1975	50 - 150 SR	Local estimate*

*These were the current prices for donkeys in the Suq al-Ahad (Sunday Market) of al-Qarah village which was visited in September 1975.

This problem has been greatly aggravated by the introduction in 1968 of the Japanese Datsun cars, which sold more cheaply than any other car. The price of a new Datsun car in 1968 was SR 6,500 (£650) paid on a monthly basis, so that some of the farmers were able to buy their own cars. Nowadays, as can be seen in the towns and in the villages of the Oasis, farmers and traders are taking advantage of the weekly markets of the Oasis, using these and many other cars and carts instead of donkeys (Plate 12.2).

Generally speaking, the constant decrease in the animal population of the Oasis could be attributed to several factors, all of them associated with the oil industry. These factors are:-

(1) The migration to the oil fields, discussed above, which reduced the family labour force with the result that many families could no longer keep large numbers of animals. Consequently, they either reduced the numbers or gave up livestock altogether and concentrated on the more profitable arable cropping.

(2) The financial improvement of some families made the keeping of animals economically and socially unattractive.

(3) The schooling of children, which spread in the Oasis as a result of the increased national oil revenue as mentioned before, took the youngsters from the family labour supply, and it was they who had previously helped to mind the animals.

(4) The introduction of motor cars in the Oasis reduced the need for donkeys and camels as a means of transport.

Although the number of cows decreased between 1956 and 1960 (see Table 12.3), it increased again in 1967. This is mainly because people still needed them for milk and butter, and because fodder had become more easily available than before (see Table 12.2).

Plate 12.2 Panorama of Suq al-Ahad (Sunday Market) showing on the left the different means of transportation to the market, and on the right the market itself

12.2 Impact on Local Trade

It has already been established in the earlier chapters that Al-Hasa Oasis used to be the entrepôt of central Arabia. All the trade in that part of the country which came from the eastern part of Arabia came through the Oasis and its port of Al-Oqair. Al-Oqair was not only the port of the Oasis, through which all exports and imports of the Oasis passed, but also, in the words of Rihani, "the principal sea port of Nejd"[38] (central Arabia). The roads between Al-Oqair and the Oasis, between the Oasis and other parts of central Arabia were, in fact, busy with the coming and going of trade. Customs offices were located in the port of Al-Oqair, whilst the wholesale traders were also located in the towns of the Oasis, especially at Hofuf, which was convenient for quick distribution to the Oasis communities and the rest of central Arabia.

The commercial position of the Oasis and its port of Al-Oqair, and also the surplus agricultural products, were the determining factors in the trade relationship between inner Arabia and the Gulf area. This position had never been challenged throughout history until recently, with the discovery of oil in the region.

The early oil exploration at a distance from the Oasis and its port of Al-Oqair resulted in 1935 in the construction of a completely new port at Al-Khobar for the purpose of importing heavy equipment needed for oil exploration, which was too heavy to be brought through Al-Oqair port. After oil was discovered in commercial quantities in 1938, an oil pipeline was constructed between the oil wells in the Dammam area and a location on the Gulf coast called Ras Tanura, where another port was built in 1939 to serve as the oil exporting port.

Although these two ports were a direct result of the oil activities in the region, they did little to challenge the commercial standing of

Al-Oqair for some obvious reasons:-

(1) They were built far away from the centre of population, still concentrated at Al-Hasa Oasis. Even Qatif Oasis can be served through its own harbour.

(2) These two new ports had no roads to connect them with the above centre of population.

(3) Furthermore, they were built by the oil company, and thus their use was confined to the needs of the company.

However, the real challenge came not directly through oil exploitation itself, but indirectly through the oil wealth generated in the economy of the country (see Table 11.1). Oil revenues gave birth, for the first time, to two major projects which have had a substantial effect on commercial activities in the Eastern Province and central Arabia. These two projects are:-

(i) the construction of Dammam port;

(ii) the building of the Dammam-Riyadh railway.

The construction of Dammam Port was begun in 1948 and completed in 1951.[39] It was initially built with two piers capable of docking two large vessels simultaneously, but developments to this port have since occurred, at different dates. Nowadays, it consists of seven piers, but according to Al-Yamamah, there is a plan to build five more piers to raise the capacity of the port to 12 piers in the near future.[40] The building of the railway was also completed in 1951, and the two projects were officially opened in the same year.

However, the construction of the new port facilities at Dammam in 1948 led very quickly to the capture of traffic from Al-Oqair, which had until then been the port of Al-Hasa, and central Arabia's gateway to the outside world, dealing with considerable quantities of freight. It may be sufficient to say it was Al-Oqair and not Dammam which was chosen for

the meeting between King Ibn Saud and Sir Percy Cox in 1922.[41] After 1951, Al-Oqair lost all its traffic to Dammam, which became the largest and the busiest commercial port in eastern Saudi Arabia.

To explain the economic situation of these two projects from the point of view of Al-Hasa Oasis, it should be noted that from early times most of the trade of central Arabia came via the port of Al-Oqair through Al-Hasa Oasis. Thus the caravan routes from Al-Oqair-Hofuf-Riyadh gave the towns and the villages en route in the Oasis (Hofuf, al-Jishshah and other villages) a vital significance, as they served as trade centres, stations or ports for the constant caravan traffic.

However, the twin projects (the port and the railway) were originally planned mainly to serve the trade of central Arabia and to a certain extent to promote the welfare of the region. The result was that the old port of Al-Oqair was neglected and declined economically and the commercial standing of Hofuf and other villages in the Oasis consequently suffered. Trade agents moved their offices from Hofuf either to Dammam (the new port) or to Riyadh (the national capital). Moreover, the camel, which until about 1940 used to be the only means of transport between Al-Oqair and Al-Hasa Oasis and Riyadh, was replaced by rail transport, and the Bedouins, who previously earned their livelihood by hiring their animals, have lost this trade. Thus, not only has Al-Hasa Oasis been affected adversely by the change of route, but so have the nomads.

Although Hofuf (the main town in the Oasis) has a rail link with both Dammam and Riyadh, the railway itself terminates not at Hofuf but at Riyadh, the capital of the country. Thus Hofuf has lost much of its previous function as a trade centre for central Arabia, and has become only a transit point, except perhaps for those goodsunloaded at Hofuf for distribution in the Oasis itself.

The arrival of the railway at the Oasis has, no doubt, benefited a few upper-class merchant families in the area, who grew more and more powerful as communication with the outside world improved. But even the money that began to come into the Oasis through them, as Vidal noted, entered the society from the top and was often spent abroad, whilst it was not available at the bottom, and the local real wages continued to be inadequate.[42] In other words, the class of merchant who benefited from the railway constitutes only a small section of the population. The bulk of the population in the Oasis has been affected in a negative way. The railway did not open new markets for the Oasis' products, but instead flooded the local markets with large quantities of foreign produce imported from various countries. As a result, the products of the Oasis lost their own markets to the attractive foreign goods, because they could not compete with these highly manufactured foreign products, either in quality or in price.

Although Hofuf, the main town in the Oasis, lost its former commercial position to the oil towns of Dammam and al-Khobar, it still keeps its old commercial precedence in the Oasis itself, followed in importance by the town of Mubarraz. Because of the position of Hofuf in a densely populated Oasis* and because of good rail and paved road communications with the port of Dammam and the city of Riyadh, access to the town became available and easy and consequently its markets became a distribution point for a wide variety of foreign goods.

The recent economic developments in the region, resulting from the oil boom have, indeed, increased the buying power of many sections of the Oasis population who are directly engaged in the oil industry as workers or in the other services associated with the oil industry. Moreover, the changing dietary habits, discussed earlier, have led to a drop

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* According to the census of 1962-63 the Oasis area contains about 38.3% of the total population of the Eastern part of Saudi Arabia.

in the demand for local produce, and an increase in demand for imported goods. This fact is clearly reflected in Table 12.6 which gives details of establishments* in both Hofuf and Mubarraz, for two different years with the commercial sector which has the largest share in the establishments being listed for both towns. It indicates that in 1967 and 1971 more than 62.4% of the establishment of both towns were engaged in commerce, and over 22.3% in manufacturing. The agricultural sector, recently boosted by many projects such as Irrigation and Drainage, Sand Stabilization and the Agricultural Research Centre, etc., had only three establishments or 0.1% in 1967 and seven or 0.2% in 1971 out of all establishments in both Hofuf and Mubarraz. This is perhaps a clear indication of the decline of agriculture in the Oasis, already explained in Chapter 11.

Table 12.7 indicates that the commercial establishments in Hofuf and Mubarraz appeared to have increased in recent years to a proportion of 2.9% for Hofuf and 29.1% for Mubarraz. If one compares this with the growth in commercial establishments in some of the oil towns, listed in the Table, one finds that the growth rate of trade in the Oasis towns is much slower than that in the oil towns. This may be attributed to the oil industry which has greatly increased the purchasing power in the latter while the slow rate of growth in the commercial establishments in the Oasis towns, especially Hofuf, reflects the relatively small amount of oil money injected into their economy.

Within the Oasis the commercial establishments of Mubarraz are growing faster than those of Hofuf. This is probably because Mubarraz housed in 1972 more than 526 employees from the Aramco Oil Company, thus increasing the purchasing power in this town (see Table 12.4).

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*The term 'establishment' is defined, according to the Department of Statistics of the Ministry of Finance and National Economy of Saudi Arabia, as a fixed place in which any economic activity is carried out. Accordingly, travelling salesmen and transport operators etc., were excluded. This definition also excludes the public sector and the Petroleum Companies.

TABLE 12.6

Distribution of the Establishments of Hofuf and Mubarraz according to their economic activities

Year	Agriculture		Hotels and Restaurants		Manufacturing		Electricity, gas, water		Construction		Commerce		Banks and business services		Transport storage and warehouse		Services		Activities not adequately described		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1967	3	0.1	-	-	662	24.2	5	0.2	12	0.4	1722	62.9	11	0.4	1	0.04	321	11.7	2	0.07	2739	100
1971	7	0.2	59	2.0	665	22.4	7	0.2	12	0.4	1854	62.5	16	0.5	11	0.4	334	11.3	1	0.03	2965	100

Source: Ministry of Finance and National Economy (1967)[43]
" " " " (1973)[44]

TABLE 12.7

Comparison between the Commercial Growth of Hofuf and Mubarraz and Selected Oil Towns

Town	Commercial Establishments		% change
	1967	1971	
Dammam	1348	1765	30.9
al-Khobar	64	736	1050.0
Hofuf	1409	1450	2.9
Mubarraz	313	404	29.1
al-Thuqbah	206	319	54.9

Source: Ministry of Finance and National Economy (1967)[45](1973)[46]

In general terms, the commercial position of Hofuf has certainly dropped from first position in the pre-oil era, as described earlier, to third position since the oil boom.

Table 12.8 shows that while only 3.3% of commercial establishments use Hofuf as their main headquarters today this figure reaches 5.4% in Dammam and even 9.2% in al-Khobar which have been established or developed only recently as a result of oil activities.

TABLE 12.8

Distribution of the Commercial Establishments according to their status - 1971

Town	Dependent		Main Centre		Branch		Total of Establishments	
	No.	%	No.	%	No.	%	No.	%
Dammam	1434	81.2	95	5.4	336	13.4	1765	100
alKhobar	552	75.0	68	9.2	116	15.8	736	100
Hofuf	1315	90.8	47	3.3	86	5.9	1448*	100

Source: Ministry of Finance and National Economy, 1971.[47]

* Two non - classified establishments have been omitted in this Table.

Indeed, many of the wholesale traders who used Hofuf as their main headquarters in the pre-oil era, have moved since the 1950's to Dammam and al-Khobar in order to take advantage of the oil boom there. Moreover, improved rail and paved road links between Riyadh, the capital, and Dammam, the new port, have eliminated the need for Hofuf to act as a staging post between central Arabia and the outside world as it always had before these new developments. Other wholesale traders might also have moved their headquarters to Riyadh, the new flourishing capital of Saudi Arabia.

In this way the coming of oil has reduced the commercial influence of Hofuf from its wider regional level, as described earlier in Chapter 9, to a local level. However, Hofuf still holds its position as the most important commercial centre within the Oasis itself, followed by Mubarraz, the second town in the area, as shown in Table 12.9.

TABLE 12.9

The Distribution of the Commercial Establishments in the Towns of Al-Hasa Oasis, 1971

Category	Hofuf	Mubarraz
Wholesale	35	000
Retail	1413	404
Others	2	000
Total	1550	404

Source: Ministry of Finance and National Economy, 1973[48]

In this table wholesale trade is seen to be concentrated in Hofuf. Mubarraz has no such establishments. This, probably reflects the volume and type of commerce in Hofuf and its function as a commercial distribution centre for all the settlements in the Al-Hasa area. It also reflects the commercial dependence of Mubarraz on the merchants of Hofuf for providing

its retail goods. That is to say, while the commercial position of the Oasis towns has been overtaken by the expanding oil towns in the north, their relationship to each other has not been changed at all. Hofuf was the greatest trading centre in the Oasis during the caravan days (see Chapter 9) and has still not yet been challenged by the commercial activities of Mubarraz. Maybe this is because Hofuf was located on the main caravan route, which was the most important trading route between the Arabian Gulf and central Arabia, while now it is located on the Dammam-Riyadh railway line and has a station. Mubarraz too is located only a hundred yards or so from the same railway line but has no station. Trains pass by Mubarraz and proceed to Hofuf where goods are unloaded for the whole Oasis. Therefore the wholesale traders of the Oasis use Hofuf as their headquarters and from here distribute their goods into Mubarraz (4 km. away) and other villages. Unfortunately no information is available on the commercial establishments in the Oasis villages and,in general, no such establishments exist here except perhaps in larger villages such as al-Uyun, al-Kilabiyah, al-Jishshah and at-Taraf which might have a few simple shops. Commercial activities in these villages depend mostly on the weekly markets which are held in some of them.

The Weekly Markets

All the villages in the Oasis depend commercially on first Hofuf and then Mubarraz, but they also take advantage of the markets which are held from time to time in certain villages on certain days of the week.Table12.10 gives details of the weekly markets and the villages cr towns in which they are held.

TABLE 12.10

The Weekly Markets and their Locations in Al-Hasa Oasis - 1975

The Weekly Markets	Location	Status of Location
Monday Market	al-Jafr	village
Tuesday Market	al-Jishshah	"
Wednesday Market	Mubarraz	town
Thursday Market	Hofuf	"
Friday Market	at-Taraf	village
Saturday Market	?	?
Sunday Market	al-Qarah	village

Source: field work

The weekly markets in Al-Hasa Oasis are not a unique phenomenon in this area. Such markets have been a feature of Arabian life since earliest times, as explained in Chapter 9. The practice is still carried out in Assarah in the south-western part of Saudi Arabia as described by Mughram[49] in Wadi as-Safra' and Wadi al-Fura' near the town of Medina.[50] It is also common practice in the other parts of the Middle East,[51] North Africa[52] and Europe.

The weekly market in Al-Hasa is usually situated in an open space inside or just outside the town or the village. The space is occupied only on the market(see Plate 12.2)and contains no permanent shops. Most of the vendors erect a wooden framework to support an awning while others just display their goods on the ground without cover or shade.

During the field work of 1972-73 visits were made to many of these markets and in September 1975, the Suq al-Ahad (Sunday Market) of al-Qarah village was chosen for use as a case study of a typical Al-Hasa weekly market.

Sunday Market of al-Qarah

This market was selected as an example of the typical but changing weekly market of Al-Hasa Oasis for the following reasons:

(1) Monday, Tuesday and Friday markets take place in the far south east corner* of the Oasis area some distance away from most of the settlements from which the majority of sellers and buyers come (Fig.12.2). This factor made them less attractive to both parties, particularly in terms of the travelling distance involved but also because all three markets are located within a 2 km. range of each other and each carry out business within the space of a few days (see Table 12.10). Obviously, a villager who has shopped at one of the markets on one day does not need to replenish his stocks at another market the next day and this means poor business for the stallholders.

(2) Similarly Wednesday and Thursday markets are held in the south western corner of the Oasis at Mubarraz and Hofuf again at some distance from the majority of the other settlements. They tend to be used mainly by those people who have other business to deal with in the towns while those who only want to make a few purchases go to markets nearer to their own villages.

(3) Investigations in 1972-73 revealed that market traders are always travelling with their goods from one market to another and consequently most of the goods displayed in each place are identical. For this reason, the study of any one of these markets will be representative of the others.

The most central market in Al-Hasa Oasis, which is attended by many people is the Suq al-Ahad (Sunday Market) at al-Qarah village (see Fig.12.2). It is well situated only a short distance from the majority of the Oasis villages and unlike the usual Monday, Tuesday or Friday markets it has no competition from other local markets. Moreover, the Sunday market is typical of weekly markets in Al-Hasa Oasis and a description of it will hold true for any other local market in the area.

*The origin of these markets probably derived from the old caravan route which crossed the area near these villages. This route was the main trade link between the Arabian Gulf and Central Arabia. It carried the bulk of trade and passengers between the old port of al-Qair and Hofuf across these villages in which the three weekly markets developed.

Fig12 THE WEEKLY MARKETS OF AL-HASA OASIS

Built-up Area

Main Roads

Railway

N

0 km 10

al-Muhtaradah

ar-Rifa

al-Marah

al-Qarn

ash-Shubah

al-Kilabiyah

SUNDAY MARKET

WEDNESDAY MARKET

Mubarraz

al-Qarah

TUESDAY MARKET

al-Jishshah

THURSDAY MARKET

al-Jafr

MONDAY MARKET

Hofuf

at-Taraf

FRIDAY MARKET

This market is situated on the western slope of Jabal Qarah close to the village of al-Qarah and probably grew up in this area to meet the needs of the surrounding villages. When a visit was made to this market in 1972-73 it occupied an area just 50 yards from its present site, the move being necessitated by the fact that the original market area was required for the building of a new village school for Al-Qarah.

Because there is no recorded information relating to this market, the author carried out interviews with some of the elderly people of the area who would have used it over many years, the aim being to establish the kind of activities carried out 20 or 30 years ago. These interviews revealed that most of the goods bought or sold in this market were produced locally in the Oasis villages, and included vegetables, fruits, dates, mats, baskets, ropes, fans (made of palm tree fronds), shoes, headcovers, pottery, ploughs, wheat, rice, goats, donkey saddles and donkeys. A few foreign goods, imported through Hofuf were also sold and these included clothes, tea, sugar, rice, cooking and drinking utensils, fats, and cloth. The traders who used to attend this market were local villagers who either produced their own goods or bought them from other local people.

The domestic manufacturing of goods sold in the market was related to the traditional specialization among the different villages. Generally speaking local raw materials were used and production was geared to satisfy only local demand. Furthermore, as a result of the long distance between Al-Hasa Oasis and any other settlement and the high risk to travellers and goods on the road, there was no competition from outside the Oasis.

The donkey was the only means of transport between the market and the outlying villages.

The Market Day (14th September 1975)

On Sunday, the market area becomes the focal point of traffic from both the villages and towns of the Al-Hasa area. People come from all directions, using varied means of transport, cars, motor cycles, bicycles and donkey-drawn carts are all used in the influx towards the market. Some people even walk from the village of al-Qarah itself or from the nearby villages of ad-Dalwah or at-Tuwaithir, which are located 800-1200 metres away from the market area.

Unfortunately, there were some problems which prevented the carrying out of a census of the number of people and the means of transport used. Firstly, the market area is located on the main road which connects the villages of al-Kilabiyah, al-Miqdam; al-Hulaylah, al-Qarah and at-Tuwaithir in the north with the villages of ad-Dalwah, at-Tuhaimyiah and al-Mansurah in the south. It was very difficult to distinguish between those who were coming to the market and those who were just en route to the other villages. Secondly, it was impossible to cover every minor road into the market area. Many lanes lead from the date-gardens into the market and, undoubtedly, some people entered the area unobserved.

However, it has been frequently mentioned, by those interviewed, that the volume of people who usually attend this market is larger than that in any other market in the area, except perhaps the Thursday market at Hofuf.* People come to this market from as far away as Hofuf and Mubarraz (11 km.) in the west and south-west, and al-Jishshah and at-Taraf village (7 km.) in the south-east, while a few even come from al-Uyun village (22 km.) to the north of the market.

Attendance at the market is much higher during the morning than in the afternoons in the summer while, in winter, the opposite is true. Obviously these facts are related to the severe heat of summer afternoons

*Most of those who use this market are town people but the majority of the villagers in the Oasis attend the Sunday Market of al-Qarah.

and the cold mornings in winter and indeed, the various extremes of weather are an important factor in determining the volume of market trade.

It was observed on market day that the old transport method of donkeys for both goods and passengers has been almost entirely replaced by the motor car which is now the most popular method of transport to and from the market.

The market day starts at 6.00 a.m. but the vendors and their goods might arrive before this time either to secure positions in the open market or to arrange their goods, ready for sale. The market reaches its climax between 8 and 10 0'clock a.m. and by noon, when the sun starts to beat down, many people start to leave, returning home with their shopping. At this point the traders become anxious to sell their goods as quickly as possible because they know that very few people will visit the market during the heat of the afternoon, and those who have managed to sell their goods start gradually to leave. The market day ends just an hour before sunset and the market area becomes empty until the next Sunday.

On September 14th 1975 the author visited this market and carried out a survey of the goods displayed there (Table 12.11).A sketch map was drawn of the market area and the arrangement of goods within it was noted (Fig.12.3). The most interesting point to emerge was that most of the goods displayed were food stuffs. However, this is not necessarily typical for, in fact, this survey was carried out during the fasting month of Ramadan* at which time Moslems usually prepare especially good and varied dishes to serve each night at the end of their fasting day. Thus, during this particular period the market would cater for an extra demand for food stuffs.

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*Ramadan is the Moslem fasting month which, according to the Islamic faith, should be observed by all able Moslems. During this month they are not allowed, for example, to eat, drink or smoke between sunrise and sunset.

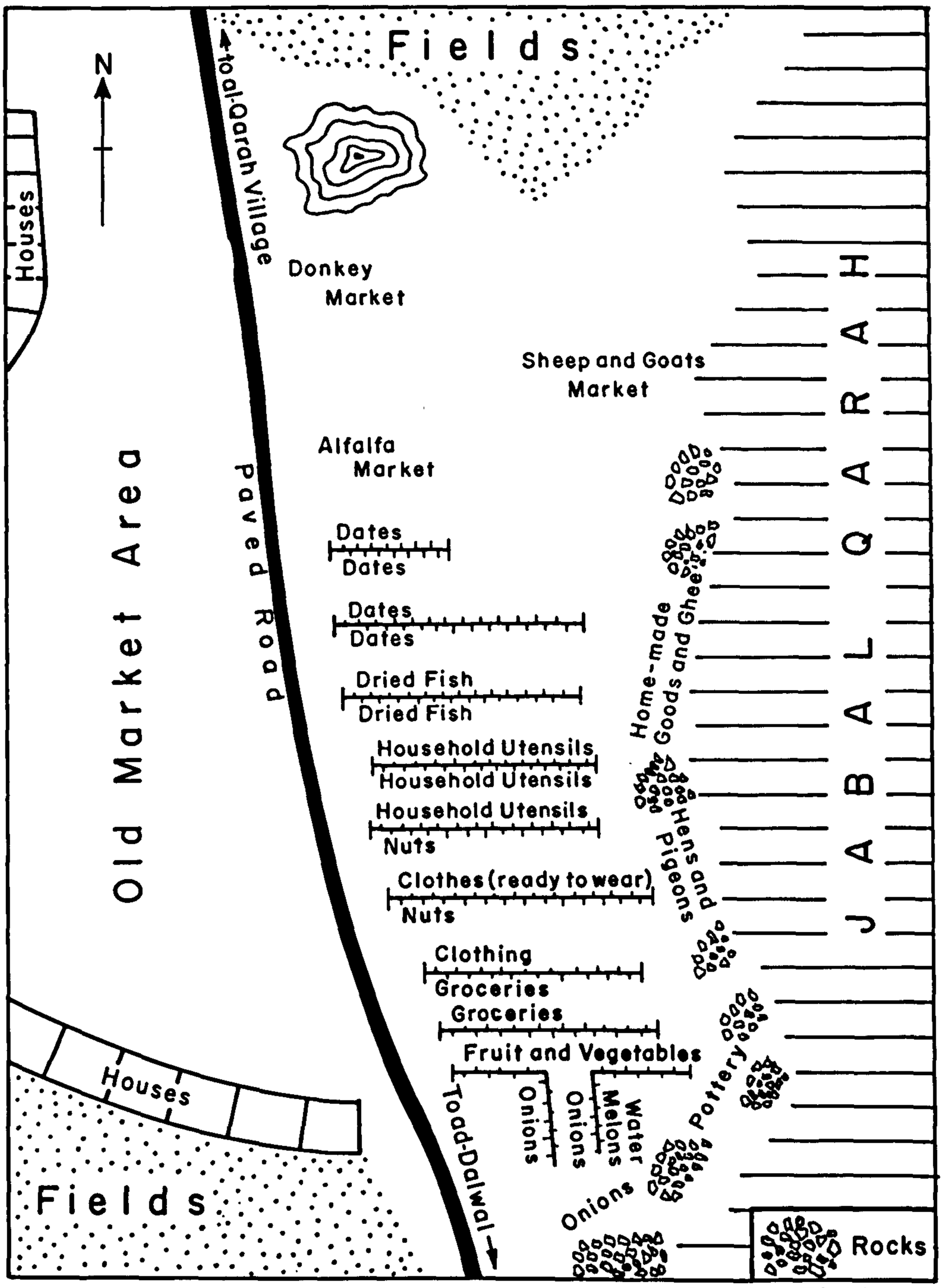
TABLE 12.11

Number of Stalls and Type of Goods displayed in the Sunday Market of al-Qarah Village (September 1975)

Type of goods	No. of stalls	Percentage
Onions	12	5.1
Water Melons	6	2.6
Vegetables and Fruits	25	10.7
Groceries	19	8.1
Cloth	6	2.6
Nuts	27	11.5
Ready to wear	12	5.1
Household utensils	30	12.8
Dried fish	17	7.3
Hens and pigeons	14	6.0
Dates	30	12.8
Alfalfa	8	3.4
Goats and sheep	3	1.3
Home manufactured goods (mats, baskets, fans, ropes, containers etc)	1	0.4
Goats and sheep ghee	10	4.3
Pottery	2	0.9
Small animal cages	1	0.4
Childrens toys	1	0.4
Salt	3	1.3
Spices	6	2.6
Oriental Fried Cakes	1	0.4
Total	234	100

Source: field work

Fig 123 Sketch map of the Sunday Market at Al-Hasa Oasis
September 1975



Source: Fieldwork

Dates occupy almost 30 stalls or 12.6% of the whole market. However, this observation should not contradict the earlier explanation that date production has declined in importance, for it is traditional that Moslems usually break their fasting day with dates before eating anything else and this would explain the increased volume of trade in dates during the month of Ramadan. During the rest of the year there is no demand for dates and few are to be found for sale for they are not considered as food now, as they were 30 years ago. Thus the earlier argument that date production and consumption in the Oasis has declined is still valid.

Nuts were the second largest item of food stuff offered for sale and, again, this can be attributed to the time of year. A great deal of evening visiting takes place during Ramadan and it is customary to offer nuts as a delicacy to be taken with tea, coffee, or soft drinks.

Although goats and sheep ghee took up only 10 stalls or 4.3% of the market trade this is a higher percentage than would be found during the rest of the year. Again, the demand for this commodity rises during Ramadan as many people like to use ghee in the preparation of special dishes. Ghee traders often buy this product from the Bedouin in the markets of Hofuf and Mubarraz and sometimes from outside the Oasis, then store it until the demand for it becomes high and inflated prices can be charged.*

Thus, dates, nuts and ghee are not always represented in the Sunday Market on the scale shown in Table 12.11, this is reflecting the higher demand for these items during Ramadan.

Table 12.11 also shows that 25 stalls or 10.7% of the market was occupied by the vegetable and fruit trade. This reflects the desire of

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*The price of one kilogram of goats or sheep ghee in the Sunday Market on the 14th September 1975 (10th Ramadan) was 20 Saudi Riyals (£2.90). At other times the price drops to 12-15 Saudi Riyals (£1.71-£2.14).

the farmers in the area to diversify their agricultural production away from the traditional date farming to include a greater range of crops, which would satisfy popular demand. This trend has been discussed in detail earlier in this chapter.

Household utensils occupy 30 stalls or 12.8% of the market area. They are all foreign products made in Communist China, Taiwan, India, Britain, Japan and Yugoslavia, and imported through Hofuf.

The home manufactured goods appear to be declining. There was only one stall to display these traditional goods. The declining of the traditional industries will be discussed later in this chapter.

The market is oblong in shape. Its expansion has been limited by the physical extension of Jabal Qarah to the east and by the presence to the west of the paved road (see Fig.12.3). Most of the rows in the market are arranged in a parallel way with a distance of 2-3 metres between them but often this distance is reduced by the improper arrangements of the goods. Each row consists of several stalls on both sides. The stall occupies an area of 2.50 x 1.30 with a height of 1.80 metres on average. It is constructed of a wooden framework and covered mostly with empty rice, wheat or sugar sacks joined to each other to form the required cover. Some people take advantage of the shade provided by the falling rocks, while others display their goods just in the open air (Plate 12.3)

While the rough ground in the market is occupied by livestock, dates and alfalfa, the smooth ground is reserved for the other goods. The interesting point in the arrangement of goods is the specialization of the whole of the stalls in any given row in selling only one type of goods with perhaps a few excepticns. This is perhaps to facilitate a quick contact between the members of any types of trade for establishing a unified selling price for their commodity in the market and thus put an end to the kind of competition between the members of that trade.

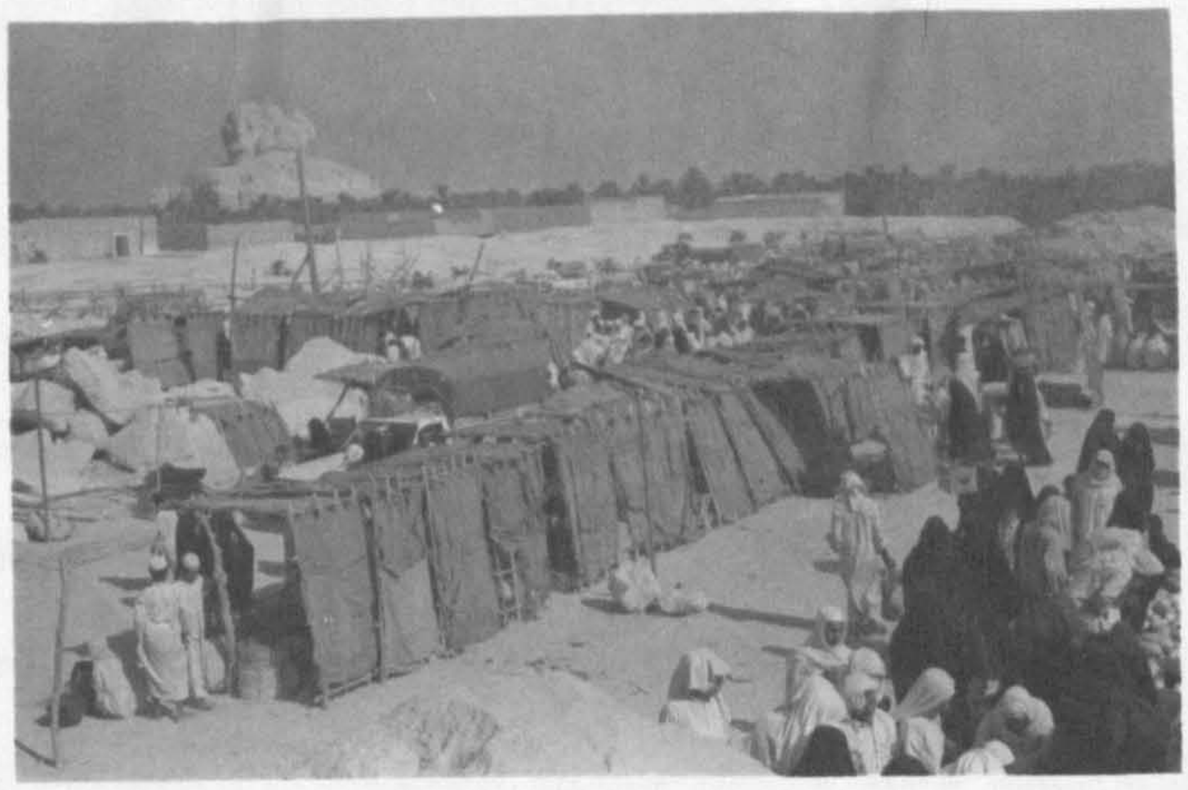

Plate 12.3 Some views of Suq al-Ahad, September 1975

Unfortunately, there is no information available on the capital involved in this market for no census has ever been carried out in the market to investigate this matter nor were the traders themselves willing to discuss it. However, from observation of the quantities and qualities of goods displayed in the market during the author's visit, one could estimate that the volume of capital involved in this market reached at least 15,000 Saudi Riyals or £2,143.

Changes in the Weekly Markets

1. Factors influencing change

a. Transport Improvement

Up to the 1930s the only means of transport between Al-Hasa Oasis and the outside world was the camel caravan. The loaded camels usually travelled the 70 km. or so, between the Oasis town of Hofuf and the old port of al-Oqair, in almost 14 hours.* Within the Oasis itself donkeys and walking on foot were the only means of connection between the different parts of the Oasis for the sedentary population of the area do not possess camels. The use of the motor car within the Oasis and between the Oasis and the outside areas was only introduced into the area by the discovery of oil in eastern Saudi Arabia in the early 1930s.

In the early years of oil exploration the oil crews found the camel an insufficient method for transporting the heavy equipment within the concession areas. It was also too slow to provide quick and sufficient contact between the oil men and their headquarters established at Dhahran. Consequently, heavy trucks which could travel the roadless desert were introduced to speed-up oil exploration in the area. As the search for oil proceeded from the north towards the Oasis, travel by motor car be-

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*This is the actual travelling time of the loaded camel which travels at an average speed of 5 km. per hour. The rest-time spent along this route is not included in this calculation.

came easier as a result of the frequent travel between the exploration sites and the oil company headquarters at Dhahran. The discovery of Aqaiq oil field in 1940, which is only 83 km. away from the Oasis has brought the motor roads closer to the area than ever.

Although one cannot give an accurate date for the arrival of the motor car in the Oasis, it appears that by the end of the Second World War there were at least two unpaved motor roads connecting the main towns in the Oasis with each other and with Dammam on the Arabian Gulf and Riyadh in Central Arabia. Hofuf at that time was still acting as the regional capital of Eastern Saudi Arabia and the administration offices were concentrated in this town. The arrival of the motor vehicle into the Oasis has indeed broken down the old isolation of the area and brought Al-Hasa into closer contact with the surrounding areas as well as with the outside world. Consequently, the old transportation method of camel caravan, which was used in the area from time immemorial declined and finally the camel was completely replaced by the motor car.[53]

By 1951 the Oasis was connected by the 566 km. railway which had been constructed between Dammam and Riyadh during 1947-1951. Between 1951-1954 an asphalted road was extended from Dammam to Hofuf in the Oasis and later the Oasis was connected in 1970 with Riyadh and in 1971 with Salwa (Qatar) on the Arabian Gulf.[54] The construction of the railway and the asphalted roads between the Oasis and the surrounding areas have greatly reduced the old travelling time from 33 hours by camel to Dammam to only two hours by car.

Within the Oasis itself the use of the motor vehicle in the internal transport between the villages and the towns became noticeable only in the early years of the 1950s. In the latter part of 1951 Vidal reported that there were four main roads connecting some villages in the Oasis with Hofuf town. Although these roads were not paved, nevertheless they

were well travelled by motor vehicles, especially on market days when taxis and trucks shuttledback and forth from the villages to the market places. A great number of vehicles were operating between Hofuf and Mubarraz towns: in 1951 there were approximately 150-200 cars operating in the Oasis.[55]

The second most important transportation method used in the Oasis was the qari* or donkey-pulled cart. While some people, according to Vidal, stated that the invention of the qari followed the importation of large numbers of motor vehicles by Aramco Oil Company, he himself believes that the qari was copied from Bahrain where it existed before the oil concession by at least a few years. However, he acknowledged that the Aramco Oil Company had stimulated the manufacturing of large numbers of qari carts by making a great number of second-hand tyres available in the Oasis.[56] Nevertheless, the use of donkeys was still widely favoured, at that time, in the interior villages for personal use short hauling as well as for the transportation of date palm-fronds, and stones.[57] This is probably because the motor cars could not penetrate deeply inside the Oasis to reach the inner villages. The roads connecting these villages were often not wide enough for the motor cars.

The projects carried out in the Oasis since 1962 stimulated, for the first time, the improvement of a number of roads inside the area. The Sand Stabilization Project which started in the Oasis in 1382 A.H. (1963) led to the construction of a number of roads which totalled 72 km.[58]

Although these roads were primarily built for the construction and preservation of this project, nevertheless they served the needs of some villages in the areas very well. Then came the Irrigation and Drainage Project which envisaged the construction of more roads, not only to serve the project itself, but also the main villages in the area

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*The qari is a springless cart fitted with second-hand car tyres and pulled by donkeys.

as well. By 1974 the total of paved roads in the Oasis reached 153 km.[59]

The extension of the road network to all the villages in the Oasis was finally considered by the Ministry of Transport when the contract for construction of an additional total of 170 km. of roads in the Oasis was granted to a Greek Company called IRAKLIS.[60] These roads are now under construction* (Fig.12.4).

Thus the connection of the Oasis externally as well as internally with a transport network exposed this area to all sorts of influences, exerted from outside the area through fast motor vehicle transportation. Foreign goods became available in the main Oasis markets on a scale unknown before. New cultural ideas reached the traditional society of the Oasis as a result of the easy and quick travel, which only became possible in the years preceding the Second World War as a result of the oil wealth.

b. Outside Contact

The improvement of the transport network betwen Al-Hasa Oasis and the surrounding areas, such as Dammam port, Riyadh the capital, and later Salwa (in Qatar), have indeed caused the most significant change in the trading pattern of the Oasis. The easy access and the use of the motor vehicle and the train, have facilitated the ever increasing flow of goods and other commodities from outside the area, mainly from abroad. It has also stimulated a population movement between the flourishing oil towns and centres, Riyadh the capital, and other connected areas, as well as within the Oasis itself.

In 1957 alone the railway line brought a total of 28,440 tons[61] into the markets of the Oasis** from outside the area. This volume reached

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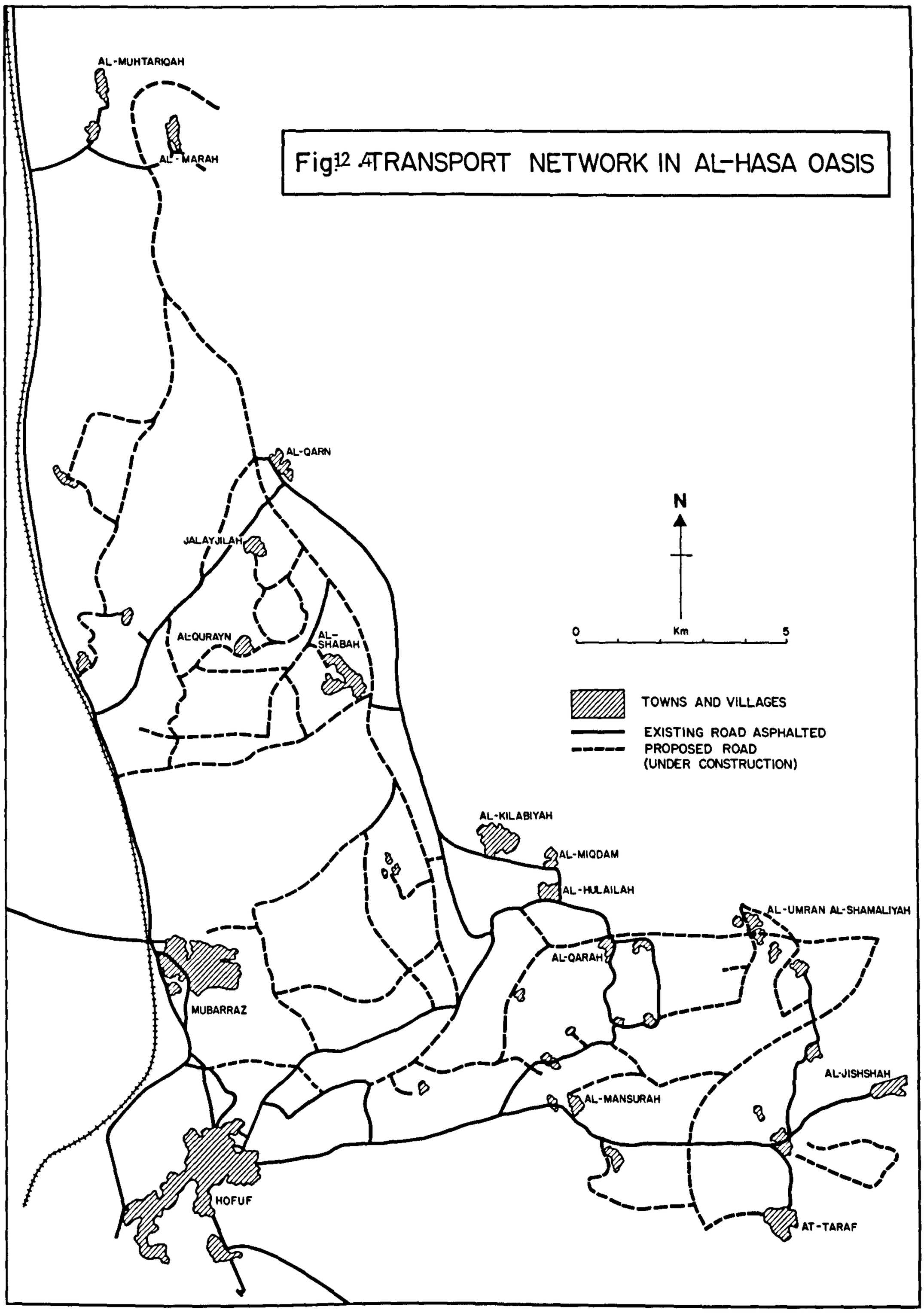
*The construction of these roads started in 1974. It still is not yet finished because the company concerned, according to the Road Authority, claimed later that the cost of 19;839;000 Saudi Riyals (£2,834,142.8) paid for the construction of these roads was not enough for their completion. In September 1975 the matter was still not settled.

**There is no information available on the amount of goods carried by other means, for lorries operating between the Oasis and other areas are run by unknown private individuals, certainly there are no goods carried these days by camel caravans.

Fig.12 TRANSPORT NETWORK IN AL-HASA OASIS



102,718[62] tons in 1972. Although the size of the population movement is not known, the number of passengers carried between the Oasis town of Hofuf and the other areas by the railway alone was 52,385[63] in 1957 and 58,628[64] in 1972*. The number of passengers who travel by motor cars is even greater than those who use the railway in their movements, for the following reasons.

(1) The location of the railway stations at some distance outside the served towns is, in fact, a factor discouraging travelling by train. Moreover the presence of the road passenger terminals close to the town centres is a factor encouraging travel by car. The railway station of Hofuf itself is located at a distance of 3.5 km. away from the town centre, while the road passenger terminal of this town is only about two hundred metres from its centre. It is an obvious advantage, from the distance point of view, for most of the passengers to travel by road rather than by train.

(2) The railway line in this region serves only a limited number of places and many others cannot be reached except by motor car. Moreover, passengers from Hofuf to Riyadh often travel by motor vehicle, for the trains travel along a distance to Haradh in the south then to al-Kharj in the west before they reach Riyadh. Those travelling from Hofuf to Riyadh by road arrive at their destination more quickly and cheaply than those who use trains. There are many other factors which cannot be discussed in this report which favour travelling by road rather than by rail.

There is no data available on the number of passengers who travel by car between the Oasis and the other areas. However, the daily average number of vehicles which passed on the Dhahran-Ahsa (Hofuf) road between 8-15 of December 1966 was 882.[65] A similar survey, carried out on the

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*The small increase in the passenger numbers between 1957 and 1972 is due to the continuous improvement of the road conditions which attracted the bulk of the passengers away from the railway (see the text above).

Riyadh-Ahsa (Hofuf) road between 8-14 of January 1967, revealed that the daily average number of vehicles which passed on that road during the above period was 217.[66] If one assumed that each car carries four passengers on these roads, then the number of passengers who travel each year on the Dhahran-Ahsa (Hofuf) road would be 1284192 with 315,952 on the Riyadh-Ahsa (Hofuf) road. However, the actual number of travellers might be even greater than the figures just quoted because not all the vehicles travelling on these roads were small cars. Certainly some of them were buses which could carry up to 45 passengers at least. Some other vehicles might not have been recorded during the survey days because they used different roads to get in or out of the Al-Hasa area.

The number of passengers and the types of goods and other commodities quoted above probably give at least an indication as to the volume of trade and the size of population movement attracted by the recent improvement in the transport network between the Oasis and the other areas in the region. However, the impact of such contact on the weekly markets of the area will be discussed later in this section.

c. Internal Movement of People and Goods

As there is no direct information available on the internal movement of people and goods, one has to detect such movement through some indirect indicators; the opening of new roads inside the Oasis, as well as the use of the motor vehicle as a new means of transport (see Section (a) above), indicate that these new facilities have no doubt accelerated and increased the movement of people and goods along the roads. This is exactly what happened between the Oasis as a whole and the surrounding areas, as a result of the improvement of the means of transport between the two areas already discussed in Section (b). The increasing mileage of paved roads inside the Oasis is another indirect indication of the size of such movement. Up to 1971 there was a total of 107 km.[67] of paved roads connecting some

villages in the Oasis.* At least all the weekly markets of the area are connected with each other and with the main commercial centre of Hofuf (see Fig.12.4) from which the flow of goods into the local markets come Observation in the Sunday Market of al-Qarah, already discussed, shows that most of the visitors to the market arrived by the new transport method of motor car and many of the goods displayed in the market were foreign products. Indeed, the construction of the new roads inside the Oasis and the use of the motor car as the new form of transport have, no doubt, accelerated, faster than ever, the process of contact between the various communities in the Oasis as well as with the outside area.

In fact, an indirect indication of the increased movement of people and goods inside the area can be drawn from the discussion on the local weekly markets mentioned in the early parts of this chapter. The presence of some foreigners in the village markets of the Oasis is in fact a new phenomenon, unprecedented before. This is also one of the many aspects of the population movement inside the Oasis. During the survey day of the Sunday Market of al-Qarah village, it was noted that almost all nut traders (see Table12.11) in the market were Yemani subjects who had arrived recently in the towns of the Oasis as unskilled labourers; but the improvement in the transport network between the towns and the villages made them move into these villages to take advantage of the regular weekly markets held in these villages. In fact these Yemanis are not the only foreign groups who have moved into the villages of the Oasis; the recent growth in the number of schools opened in the villages has also stimulated the arrival of many Egyptians, Syrians, Palestinians, Iraqis and other nationalities into these villages to teach in these schools. The movement of these foreign teachers is usually associated with the start or end of the school terms. Most of these

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*The length of the roads does not include the paved streets of the villages, nor those of the Oasis towns.

teachers arrived in these villages with their families. However, the number of foreigners in the villages probably does not exceed 500.

The economic development of the towns of the Oasis, which has been stimulated by the expansion of the government services, has also attracted some population movement from the various communities of the Oasis to the towns of the area. This can be seen in the expansion of towns in Chapter 13.

d. The Increased Purchasing Power

Although Al-Hasa Oasis is located outside the main oil boom area of the Eastern part of Saudi Arabia, nevertheless oil money reached the area through indirect sources. The first oil money reaching the Oasis was in the form of small amounts of cash remitted or brought by the early migrants to their families in the various parts of the Oasis. Such a practice is still evident at the present time, as is shown in the discussion of migration in Chapter 11. The exact amount of money brought in or remitted to the Oasis is not known because this is considered a personal matter and not many people were willing to give information on it. Secondly, from 1951 onwards the revenue from oil started to increase (see Table 11.1 and consequently the direct expenditure of the government started to be increasingly felt not only in the Oasis itself but also everywhere in Saudi Arabia. Salaries paid to the various government employees in the different departments are the major means of spending the oil money. For example, the government in 1971 employed in the field of education alone in Al-Hasa Oasis about 2,028* teachers.[68] The government expenditure in the various localities comes also in the form of rent or local contracts to construct buildings for its various departments. The development programmes initiated in the Oasis since 1960

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*Employees outside the teaching profession in this department are not included in this figure. Teachers, other employees in the adult schools, night schools and private schools are also excluded.

provided a third source for the flow of capital in the area. For example, the construction of the Irrigation and Drainage Project in the Oasis between 1967-1971 cost $51 million. This project alone provided almost 2,200 jobs for the local people in addition to another 155 for Germans who supervise this project.[69] The salaries received by these employees indicate the amount of money injected into the local economy of the area. All these sources and possibly others have, no doubt, increased the purchasing power of most, if not, all the inhabitants of the Oasis.

Thus it goes without saying that the original source of capital which has affected purchasing power in the Oasis is the oil revenue, which enabled the government, for the first time in history, to embark on large spending in the Al-Hasa Oasis as elsewhere in Saudi Arabia.

2. Some Aspects of the Recent Changes in the Weekly Markets

The weekly markets of Al-Hasa Oasis have no doubt gone through a dramatic change in recent years as a result of the ever increasing flow of goods and commodities into these markets from the outside world through the Oasis town of Hofuf. These increases have indeed been facilitated and influenced by the recent improvement in the transport network, firstly between the port of Dammam and the Oasis town of Hofuf, and secondly between Hofuf itself and the weekly markets of the area. These external and internal transport networks have not only brought competitive foreign goods and commodities into the traditional markets of the Oasis, but also with them have come new ideas as a result of the recent contact between the indigenous population and other cultures (see 'outside contact' in section (b) above). The old isolation of the Oasis broke down and the area became open to all sorts of influences from outside the area. Indeed, the increased internal mobility of the people helped to speed up the spread of foreign influence, as seen in the changing dietary habits

of the local inhabitants, which have already been discussed in the early part of this chapter, and everywhere in the area though with to varying degrees the foreign influence is apparent.

The flow of cash capital into the area (see section (d) above) has also promoted the purchasing power of the inhabitants, so that the majority of the population became able to pay for the attractive foreign goods sold in these markets.

In the following comments an attempt will be made to point out some of the changes which occurred in the weekly markets of the area;

(a) Some Aspects of Changes in the periodical markets

The locally produced goods, discussed before, have certainly lost their traditional positions in these markets in favour of the imported ones, and changes in dietary habits, which have resulted from the recent contact with different cultures, either in the oil centres or in the Oasis itself, have occurred. Local dishes made of local products have lost favour and instead foreign ones have become widely popular. For example, dates, which used to be the most important item sold in these markets before the 1950s, have been reduced substantially in today's markets.* Dates are no longer eaten these days as breakfast or as dinner as sometimes used to be the case. The baking of bread mixed with dates, is also on the decline, for the author saw in 1972-73 only two bakeries** in Hofuf town which were still baking this traditional bread. In

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*However, this statement should not contradict Table 32 which shows 30 stalls, or 12.8% of the goods in the market, selling dates. As has been explained in the analysis of that table, the presence of the large quantities of dates in the market was associated only with the Moslem fasting month of Ramadhan on which all Moslems break their fasting day with dates before eating anything else. Thus, after the end of the month of Ramadhan the date trade declines sharply except perhaps in the harvest seasons, when the farmers display large quantities of the date crop in the markets for quick sales.

**One of these bakeries was located near al-Jern Gate in the southern part of Hofuf and the other 30 metres distant located in front of ar-Rawdhah Hotel in the town.

fact, dates are no longer acceptable in the payment of workers wages as was the case before 1950.

People have learnt these days to buy ready-cooked beans mixed with olive oil or goat or sheep ghee which they eat with bread as breakfast. This is originally an Egyptian dish which has been introduced only recently to this area. Bread is also bought ready-made from the bakeries or other shops and the old household practice of preparing bread at home, is also on the decline. Consequently, the quantities of grain in the periodic markets drop sharply in response to the lack of demand for this commodity.

Even the water-cooling pitchers,which were in large demand twenty-five years ago, have also been hit by the new practice of using refrigerators imported recently from abroad. In September 1975 there were only two stalls which displayed these cooling potteries for sale. These are used nowadays only by the poorer sections of the rural population who probably cannot afford to buy refrigerators, or whose villages might not yet have electricity.

The home manufactured goods have also been reduced in these markets for there is no demand for them. Fans, made of palm tree fronds, have almost been replaced by the new imported electric ones. The imported Indian and Japanese mats have put an end to the local ones. Imported nylon dining sheets have replaced the traditional dining mats which used to be in great demand some twenty years ago. Even the locally made sandals and the shoes known as Zarabil have also disappeared from the markets and are replaced by similar highly manufactured foreign ones. The famous headcover made in al-Uyun villages has completely disappeared in these markets. Many new headcovers come now from Japan, China and a number of other foreign countries.

In general, one can only say that the locally made goods which used

to dominate these markets twenty five years ago have declined in quantities because of the lack of demand for them these days. Instead the markets are flooded with competitive foreign goods and the local ones could not compete with them. The only local production which still dominates the periodic markets are vegetable crops. In fact, their quantities, according to some informants, have increased these days. This is, indeed, also reflected in the increased areas of vegetables, illustrated previously in Table 12.2. The increased vegetable crops in the markets have probably been influenced by the change in dietary habits discussed before in Chapter 11.

b. Changes in the Trading Practice

The old practice of bringing goods into the markets for exchange has gone forever. No longer can one buy sugar with dates or wheat, nor with vegetables or other local commodities. This old practice seems to be even forgotten by the younger generation, due to the availability of cash capital. Goods must be paid for immediately and in full cash. Payment of debts which used to be delayed till the harvest seasons is not practiced these days.

Similarly, most of the traders in the markets thirty years ago were the farmers themselves who could not find customers for their products in their own villages where everyone seemed to be a producer.- As a result, they used to bring these products themselves to the market areas either to be exchanged in kind or sold directly to the small traders, who collect supplies to sell at the bigger centres. The bigger commercial centres of Hofuf and Mubarraz were too far to be reached by the old transport method of donkey, and the products might suffer some damage on the way, and this led to the reduction in their values in these markets.

Nowadays many of the farmers take advantage of the improvement in

transport conditions and the changes in dietary habits and have commercialized their agricultural products. Instead of selling these products in the local weekly markets, they prefer to take them to the permanent markets of Hofuf and Mubarraz for quick sales and better returns. The weekly markets are, nowadays, too small to absorb such large quantities of farm products. Those who still market their farm products in these periodic markets are usually the small producers who have not got their own transportation or cannot afford to pay for the transportation of their small quantities of products to the big markets of Hofuf or Mubarraz towns.

c. Changes in the Transportation of People and Goods

It has been observed earlier in this chapter that the relative importance of the old methods of travel to the markets has greatly declined these days. Although there is no census on the type of transport methods used these days to and from the periodic markets, it was noted during the September 1975 visit that most of the goods and the people were arriving at the market by motor cars. Taxis, Mini Buses and other motor vehicles operate shuttle services between the different villages, towns and the markets on the marketing days. The fares charged for transportation to the markets are reasonable and can be afforded by, perhaps, everyone.* However, donkeys and donkey-carts were also used in the movement of people and goods to the markets, but nevertheless, their usage was on a very small scale. It is worthwhile to mention that on the market day visit it was noted that there were about 21 donkeys and 17 carts brought for sale in the market. This is perhaps an indication of the declining importance of this old method of transport which had served the area for so long.

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*On the 14th September 1975 the author paid one Saudi Riyal (£0.14) to travel by taxi, with another passenger, from Hofuf town to the Sunday Market of al-Qarah village (11 kms. approximately).

d. The Declining Importance of the Periodic Markets

The decline in the traditional goods displayed in these markets, the changing of the transportation methods and the marketing practice, are no doubt signs of the decline of the traditional functions of these markets. Certainly the improvement in the transport network and methods have, apparently, accelerated the movement of both people and goods to these periodic markets. However, they have also opened up new roads to the more competitive permanent markets of Hofuf and Mubarraz towns. Consequently, many of the producers and consumers of the villages nowadays go to the permanent markets of these towns instead of the periodic ones, not only because many consumers are to be found there, but also to buy what they need themselves from the abundant selection of goods in these towns. The long distance and the hardships which encouraged both the producers and the consumers of many villages to go to the nearest periodic market in the past are now over. The modern transport methods and the new road networks have shortened the distances between the villages and the larger markets in the towns. The travelling time between these places has also been greatly reduced from several houses by donkey to only a few minutes by car. As a result, many of the previous hardships in travelling have now been overcome. The periodic markets are no longer the only convenient places for marketing farm or village products.

Social reasons for visiting the periodic markets have become nowadays less significant than before. In the past the market had a function, beside its main commercial one, as a medium for exchanging news and as a place for public announcements as well as for the transaction of other social business. These were essential parts of the market days. Nowadays the radio, the television, and perhaps the telephone and the newspapers, have brought the news to the homes of many inhabitants in the

area. Those who lack these facilities can exchange the news through the easy and quick contacts facilitated these days by the modern transport network, as well as the efficient means of travel. Thus these old functions for the markets have sharply declined these days.

Moreover, the number of people attending these markets has also declined today, due to the growth of schools (see Appendix B), government services (see p312) and other businesses* which have absorbed a large number of youngsters and adults, who otherwise would have attended these markets as their forefathers did before. As in the Misurata Market town described by G.H.Blake,[70] the younger generation of the Al-Hasa area see the market days as a commercial occasion for the backward rural areas. It is not worth their while going to such markets if their needs can be met in the more elegant groceries in the main towns of the area even though they may be more expensive than those in the periodic markets. Most of those who go these days to the local markets of the villages are the older generation who, perhaps, could not secure jobs in the other economic sectors, for they do not read or write, or they lack the needed experience. It is probably more profitable for them to find employment in these periodical markets (buying or selling) than to till the land.

All these points already discussed, and perhaps others, may be adduced as signs of the declining importance of these markets.

There is no need to restate that the causes for these changes in the periodic markets are mostly associated with the coming of oil into the region.

However, the probable future for these markets may be considered later in the conclusion of this thesis.

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*The total number of economic establishments in Al-Hasa Oasis in 1971 was 2,965 with a total employment of 4,808 persons. (See Ministry of Finance and National Economy, Nata'j Hasr al-Mu'assasat Li'am 1391 A.H. Fi Al-Mantiqah ash-Sharqiyah, Riyadh,1973,p.5.)

12.3 The Impact on Industry

In addition to the well established agricultural, commercial and administrative functions explained in this chapter and Chapter 9, Al-Hasa Oasis was also the home of many light handicrafts, utilizing mainly local materials available in the area. In the past, these skills were developed here not only to satisfy the local need of the inhabitants, but also to satisfy demands from other parts of the country. Products such as Uobi and Mashalih (garments for women and men), kitchen utensils and Dilal or coffee pans, found ready markets outside the Oasis area.[71]

Although the history of the Oasis crafts cannot be traced with complete accuracy, praisworthy mention of its Futah (a sort of textile production) industry was recorded as early as 1050 AD by Nasir Khosro[72] (a Persian traveller) while some other crafts, such as domestic furniture, wood-carving and window frames were thriving at least as early as 1862-63 when they were mentioned by Palgrave.[73] Others, such as 'Abas or Uobi (garments), copper and brass for making coffee-pots, and hide and reed-matting were also recorded at the beginning of this century by Lorimer.[74] Many more crafts have usually been mentioned by writers and travellers who visited the area such as, Philby,[75] Cheesman[76] and Vidal.[77] The main traditional industries of the area are shown in Table 12.12.

It appears that the recent improvement in the transport network, between Al-Hasa Oasis and the outside world and within the Oasis itself, has led to foreign competition, and the Oasis markets have become flooded with varieties of highly manufactured articles from many industrial countries, such as Japan, China, Eastern and Western Europe, the United States of America etc. These have very much outweighed the local industrial products in both quantity and quality, so that the inhabitants, with their recently increased purchasing power, (already discussed in this chapter) have eagerly bought the attractive foreign goods and neglected

TABLE 12.12

The Main Traditional Industries of Al-Hasa Oasis

No.	Type of Industry	Classification
1	Textile Industry	a. Uobi (garments) b. Uobi decoration (cutting, tailoring and the final decorating c. Taqiyah (head covers) d. Matresses, pillows, cushions and others e. Donkey and camel saddle bags
2	Metalwork	a. Blacksmiths b. Copper and Brass smiths c. Silversmiths d. Goldsmiths
3	Pottery	a. Water pots b. Incense burners
4	Leatherwork	a. Hide preparation b. Making sandals c. Making Zarabil (winter shoes)
5	Quarrying and making Lime	a. Sun-dried brick made of fine clay b. Stone work c. Milling stones
6	Woodwork	a. Gates, doors, windows and frames b. Preparation of roofing beams c. Furniture d. Wood carving e. Donkey Cart Box Making f. Donkey and Camel Saddles g. Roasted Coffee Containers or (Sarrud)
7	Manufacture of Agricultural by-products	a. Basket work b. Matting and fans c. Date Packing Sacks d. Donkey Panniers e. Palm Fibre Ropes f. Cradles, Pot Stands, Packing Crates, etc. g. Bird and Small Animals Cages

Source: Personal Investigation in the area in 1975

those produced locally. Consequently many of the local industrial products have lost their own markets to the foreign imported ones and, as a result, the majority of the local crafts have either declined in importance or completely disappeared from the area.

Vidal states that, in recent years, the Syrian, Yugoslavian and other imports have "contributed greatly to the decline of Al-Hasa metal work. Stronger and cheaper iron or steel mortars and pestles, and enamel ware wash basins and jars have largely replaced the brass, copper and tinned-copper ones of local origin".[78] During the visit of 1972-73 none of the traditional Al-Hasa metal pots were being produced in the area, except perhaps pots for roasting coffee with stirrers and milqat (a pair of metal tongs used to manipulate the hot embers). Although, there were about 19 metal shops in various parts of Hofuf, only four of these were primarily engaged in repair work while the others were selling foreign imported articles. Some of the old Al-Hasa coffee pots and other articles are to be seen in the antique shops for sale to tourists.

Goldsmiths and silversmiths, who flourished by melting down the old gold and silver currency, which they then turned into ornaments such as bracelets, bangles and necklaces, have been badly hit by the government's decision, in the early 1950s, to withdraw gold and silver currency from the market and replace it with paper money. This valuable raw material, readily available thirty years ago is now very difficult to obtain and then only on the black market at a high price. Moreover, the traditional designs used by the old craftsmen now seem old-fashioned and are therefore spurned by the young ladies of the area, who now prefer, rightly or wrongly the new foreign ornaments which are readily available in the newly established jeweller's shops in the markets of Hofuf and Mubarraz. The contents of these shops are all imported from Switzerland,

Germany, Holland, Japan, Britain and elsewhere. In the last twenty or thirty years, the young people have been greatly influenced by more direct contact with other foreign cultures resulting from the opening up of the oil fields and improved communications.

There are these and perhaps other good reasons for the decline of the traditional gold and silver works of this area, but even so, the decline of these crafts is not so great as in the case of blacksmiths or copper and brass-smiths. Indeed, in 1972-73 there were 12 shops for gold and silverwork, concentrated mainly in a small street near the municipality of Hofuf. Although they were engaged mostly in mending old pieces, a few of them were still producing some of the traditional ornaments worn by the Bedouins and older villagers. Such shops manufactured these ornaments from old broken pieces of gold and silver, bought for the purpose. However, even this small demand for traditional articles is continuously on the decline as the Bedouins and villagers are increasingly settling in the Oasis towns and joining the urban population.

Woodwork production is also on the decline today. Gates for the larger houses and villas and garden fences are at present made solely from imported metal sheets and iron bars, which are manufactured in recently established metalwork shops using modern production methods. Although doors and window frames are still made of wood, local woods, such as the Ithil (tamarisk) and the palm tree trunks, are not now used in their construction, having been replaced by imported woods. This applies also to the old practice of using Ithil and palm tree trunks for roofing beams. Doors, windows and boxes are not carved these days as hand carving is an expensive and time consuming art and now regarded as old-fashioned. Today, people prefer plain doors and windows with only a touch of simple but elegant design and the elaborate traditional carved designs can only be seen now on the facades of older houses. Similarly,

the demand for donkey cart boxes has steadily declined, as this ancient form of transport comes to be replaced by the motor car (see the Weekly Market, in this chapter). Furniture too, is imported and is readily available in the markets of Hofuf and Mubarraz. Some is also produced in the newly established factories in the area which, besides furniture, make doors, windows and frames of different kinds.

Quarrying and making lime, which used to be practised all over the Oasis area, for use in the construction of buildings, are also declining activities. The establishment of a cement factory in the area in 1960 badly hit the local quarries and many of them were forced to close down as demand for the product dropped sharply. Sun-dried clay bricks are rarely used these days for the construction of houses, and the majority of the inhabitants prefer to use cement as the prime building material. In fact, the demand for cement has increased so much that the factory output is only able to satisfy about 50% of the current demand in the area.[79]

Even the milling stones which were reported by Vidal[80] have completely disappeared and many of the younger generation, under the age of 20 years, have probably never seen them at all. Grinding of cereals is carried out these days by recently introduced mechanical mills in Hofuf and Mubarraz. Some flour is also imported from abroad for sale in the Oasis markets.

The fate of the leather work in the area is no better than the other handcrafts discussed above. Inquiries in the area during the visit of 1975 revealed that only a few hides are now being cured. These are used in the production of the local sandals still worn by a small minority of the inhabitants of the area. However, even this craft is showing signs of decline for many of the professionals have completely abandoned this for more profitable jobs in new expanding industries.

The old practice of making the local winter shoes known as Zarabil has completely disappeared from the markets of the area and, generally speaking, the decline of leather work in the Oasis can be attributed to the availability of many foreign leather goods superior in quality and quantity and cheaper in price.* than the locally produced ones. Recent contact with other cultures seems not only to have affected the dietary habits of the people but also their taste in the style of shoes which they wear.

The manufacturing of pottery, which used to be popular throughout the Oasis area, mainly around Hofuf and Mubarraz and the al-Qarah villages, has also suffered recently due to the availability of many imported metal and glass containers which are reasonably priced and more practical to the modern life style. The introduction of the refrigerator into many houses in the area and the availability of ice from recently constructed ice plants, has led to a drop in demand for the traditional pottery water pots and consequently; many businesses have been forced to close down. In 1975 there were only two pottery work shops left in the area near the village of al-Qarah. Even the makers of incense burners have had to reduce production because few people now require this commodity.

Once thriving village industries, directly related to agricultural by-products, have also declined. Locally produced baskets, matting, donkey packing sacks, donkey panniers, palm fibre ropes, cages for small animals and birds, cradles...etc., have all been either replaced by more practical imported ones or are now mass produced in the towns. For example, attractive reed-matting and rugs are now being imported from India while sacks for donkeys are no longer required because the donkey itself as a

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*In the summer of 1972 the price of the local sandals was on average 18 Saudi Riyals (£2.57). The price of foreign imported ones of different design, was approximately 12 Saudi Riyals (£1.71).

means of transportation in the Oasis has declined (as explained in the Weekly Markets in this Chapter). Date packing sacks are no longer needed because the newly established date factory has absorbed a large quantity of dates which used to be packed in sacks made locally from palm tree fronds.

In fact, the only traditional industry which flourished in the past and also today is the textile industry. This industry has recently modernized and mechanised and its production has increased more than ever before. Since the establishment in 1963 of the National Textile Company at Hofuf, the annual production of this factory reached 175,000* metres of Uobi (garments) material with a width of 75-80[81] centimetres. This material is used for the manufacturing of Uobi and mashalih which are in demand on a national level not only in Saudi Arabia but also in Qatar, the United Arab Emirate, Oman, Bahrain and Kuwait, and as far afield as Iraq, Syria, Jordan and maybe other countries. These circumstances probably explain the expansion and modernization of this traditional industry of Al-Hasa Oasis.

In general terms one could say that the traditional industries in the Al-Hasa area have suffered a real decline in recent times. They either could not compete in their own markets with highly manufactured foreign goods or the functions which they used to fulfill became out-dated and were superseded by more efficient newly founded establishments. Many traditional products are not suited to modern demand which has been strongly influenced by the growth of education and improved employment opportunities for the younger generation both inside and outside the area. There are probably many other reasons which might have also contributed to the decline of local industries but the nature of this topic does not

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*These are no figures available for the production of this textile industry in the traditional period, but since it was a hand operated one, its production must have been less than at the present time.

allow further investigation.

However, to compensate for this decline in traditional industries, many new and modern ones have been recently introduced in the area to suit the new demands of modern times. Industries recently established in the area include a cement factory, date packing factories, soft drink factories, ice plants, mechanical workshops for carpentry and metalwork, motor car factories, radio and television repair shops and many others.

From censuses carried out in 1967 and again in 1971 by the Ministry of Finance and National Economy, it appears that the old industrial position of Al-Hasa Oasis, represented by its capital Hofuf, has been lost to the newly developed oil towns in the area as shown in Table 12.13.

TABLE 12.13

Comparison between the Industrial Growth of Hofuf and the other oil towns in the area

Town	No.of the Industrial Establishments		% Growth
	1967	1971	
Hofuf	467	443	-5.1
Dammam	442	456	+3.2
Al-Khobar	212	252	+18.9
Dhahran	12	14	+16.7

Source: Ministry of Finance and National Economy (1967[82] and 1973[83])

This table shows that while the oil towns showed signs of positive industrial growth ranging from 3.2% to 18.9%, Hofuf, the main town in the Oasis, showed a real drop of -5.1% in its industrial growth between 1967-1971. This decline can probably be explained either in terms of industries moving away from Hofuf to other towns, perhaps to the newly

established oil centres, or because some of the old local industries could not compete in the markets with the highly manufactured foreign goods which have recently been imported into the Oasis area.

As explained earlier it seems certain that although Al-Hasa Oasis has acquired some new and modern industries in this era of oil, it has nevertheless lost its former industrial position to the newly developed oil centres and maybe to other flourishing towns such as Riyadh. The decline or disappearance of the old industries of the area meant the loss of many employment opportunities but this loss has often been compensated by the creation of new jobs in the various industrial establishments recently introduced into the economy of the area.

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PART FIVE

THE IMPACT OF OIL ON SETTLEMENT

CHAPTER 13

THE IMPACT ON THE URBAN SETTLEMENT

13.1 The Plight of towns during the early oil era (1938-1960)

As has been seen in Chapter 12, the initial impact of oil - new towns, transport infrastructure, etc - was felt in the oilfield areas themselves. The initial capital investment was high, and this had to be made before the more remote communities began to benefit. Thus the situation in the early days of oil was one in which there was rapid development on the oilfields, while peripheral communities stagnated or even declined. Al-Hasa Oasis was no exception to this general rule, for Hofuf lost its administrative function even though it gained a rail link.

Unfortunately, there is no statistical data to support this proposition, but the aerial photographs which were taken in 1949 and again in 1968 provide invaluable evidence of this fact. Plate 13.1shows that the towns of the Oasis up to 1949 had not expanded beyond their traditional walls, and their physical characteristics, described in Chapter 9, had hardly changed since the 1920's. This situation reflected the economic poverty suffered by these towns as the result of the discovery of oil in places distant from the Oasis, which in turn enjoyed considerable prosperity.

Indeed, the emigration of people to the oil areas reported by Vidal[1], Abul Ela,[2] Speetzen[3] and by Al-Shuaiby[4] may have somewhat reduced the population of the Oasis towns. Thus the natural increase in the population of these towns was accommodated within the built-up areas in the space left by the departing emigrants.

As stated before, the number of emigrants from the Oasis to the oil areas is not known, but the available figures for employees from the Oasis directly participating in the oil industry are quite accurate.

Plate 13.1 Aerial view: Mubarraz and Hofuf towns in 1949

During 1954 3,827 persons from the Oasis were employed in the oil industry (see Table11.2). In 1972 there were 495 employees from Hofuf and 526 from Mubarraz town, engaged in this industry (see Table 12.4). In 1975 a small questionnaire sample was carried out by the author in the main oil towns to investigate the number of emigrants from Al-Hasa Oasis and various other aspects (details are in Chapter 11). All these facts indicate the volume of emigration to the oil area from Al-Hasa Oasis. However, the number of those who participated indirectly in the oil industry is unknown, but observations in the oil towns of Dammam, Dhahran, Al-Khobar and Abqaiq during visits in 1972 and 1975, indicated that their numbers are far greater than the figures quoted above. There are probably no less than five thousand persons from Hofuf and Mubarraz now living in the oil towns.[5]

Migration to the oil towns, and the removal of the provincial capital in 1953 from the Oasis to the oil town of Dammam, were certainly two of the important factors leading to the stagnation of growth of the towns of Hofuf and Mubarraz. This stagnation was, however, already evident in the middle of the 1950's, for Vidal's maps of both Hofuf and Mubarraz (Fig .13.1) showed no sign of the towns' expanding beyond their traditional walls, despite 18 years of oil exploitation in the Eastern Province.

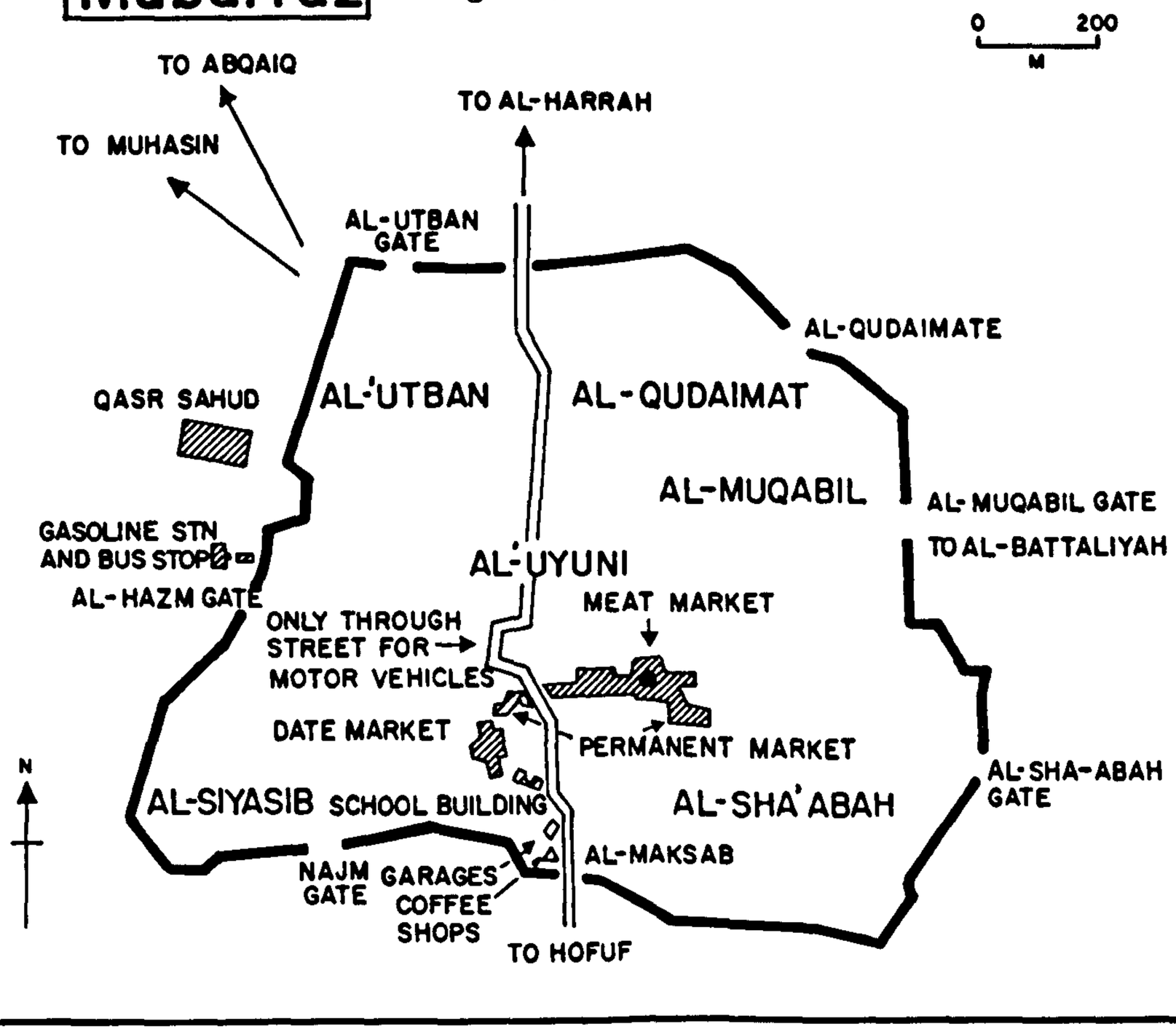
Indeed a comparison of the aerial photographs from 1935 and 1951 (see Al-Shuaiby, 1976)[6] shows no traces of expansion at all. In fact these maps and the aerial photographs above indicate the negative impact of oil upon the towns of the Oasis, in sharp contrast to that on the oil towns themselves which grew rapidly, beyond the expectations of the town planners (see the second section of Chapter 4).

13.2 Unplanned Town Expansion

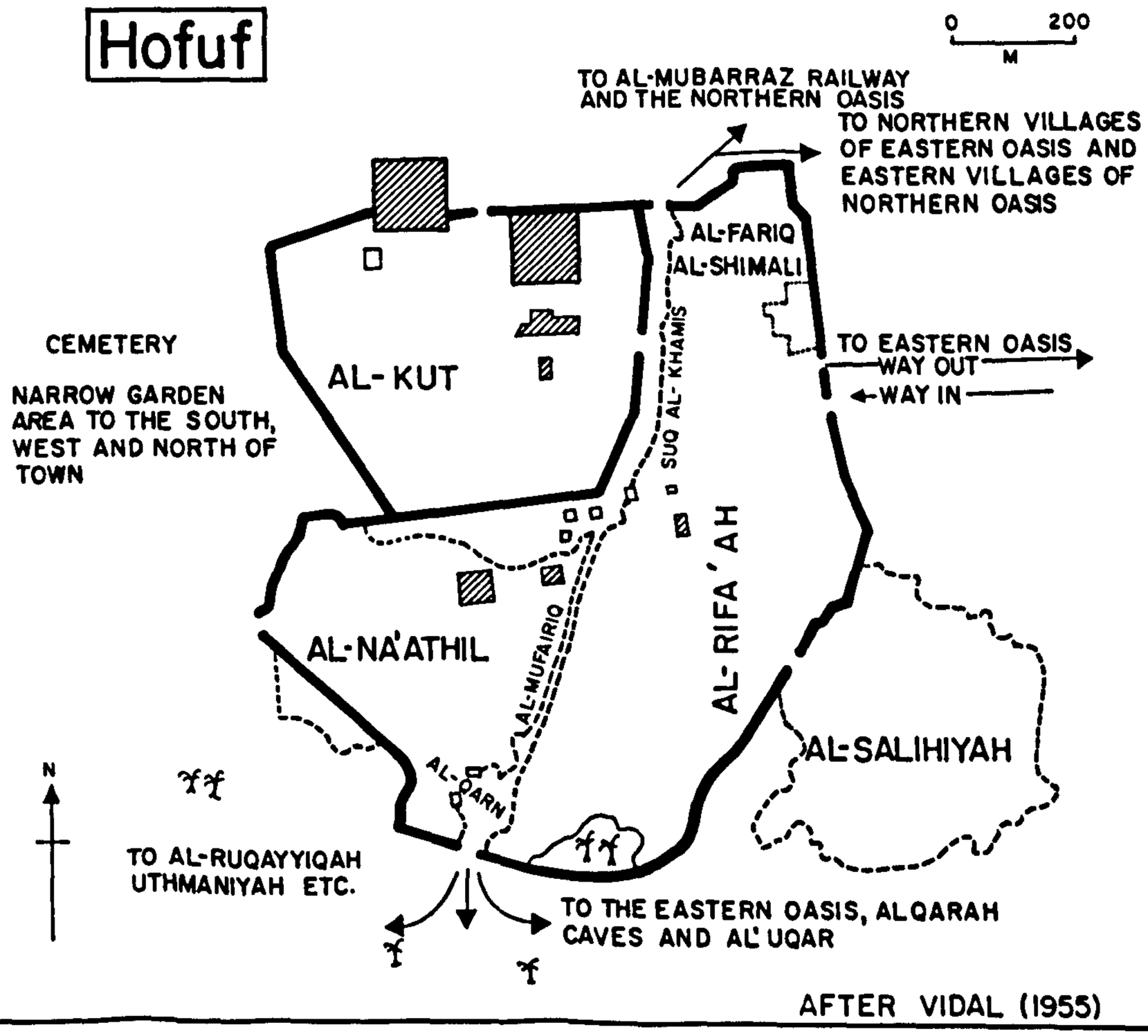
The growth of Hofuf and Mubarraz became apparent only after 1955,

Mubarraz

Fig.13.1



Hofuf



AFTER VIDAL (1955)

for Abul Ela[7] was the first writer to mention it. This growth, however, is relatively small and slow when compared with the rapid growth of the oil towns. The fast expansion of the oil towns necessitated hasty counter-measures in an attempt to control a growth underestimated by each plan in turn. However, the case of Al-Hasa Oasis was quite different. According to Shiber,[8] even in the early 1960's its towns "showed little tendency to grow, and their modest requirements were met by small unrelated subdivision plans made by the local city engineers."

The small and slow growth experienced by the Oasis towns during the early years of oil exploitation was, according to some investigations in the area, spontaneous unplanned growth.[9] People in these early days took over the vacant spaces within the old quarters and built their own houses in the traditional style and according to their own choices.

The traditional construction materials were also in common use and there was little interference from the Municipality, which was chiefly concerned with legal aspects, other than to prevent the obstruction of streets. Some of the houses within the old quarters had also expanded in a vertical way using the same traditional materials and methods. Such unplanned growth had occurred according to Al-Shuaiby "in almost every part of Arabia".[10]

The street patterns of the towns kept their traditonal characteristics except that the two streets which enter Hofuf from the east and the main street which divided Mubarraz into two parts were widened. These early developments occurred, according to Vidal, in the early 1950's.[11] They were probably not more than cosmetic changes to these old streets originally designed to enable the newly-introduced motorcars to penetrate these towns in limited areas and to a limited extent. The aerial photographs taken in 1949 (see Plate 13.1)show that expansion

outside the town wall was almost nil, except perhaps in as-Salihyah Quarter in the eastern part of Hofuf town. By 1959, however, the unplanned expansion of Hofuf, and Mubarraz, which has been reported by Abul Ela,[12] became so noticeable that the government and the oil company acted together to prevent the repetition of the creation of shanty towns which had occurred earlier in the case of Dammam and other oil centres (see Section two in Chapter 4). In fact town planning became a necessity not only for the oil towns or the Oasis towns but also for all the towns of Saudi Arabia which started to expand as more and more oil money was injected into their economy through the increased expenditure of the government of the revenues accruing from that industry (see Table 11.1 for the country oil revenues).

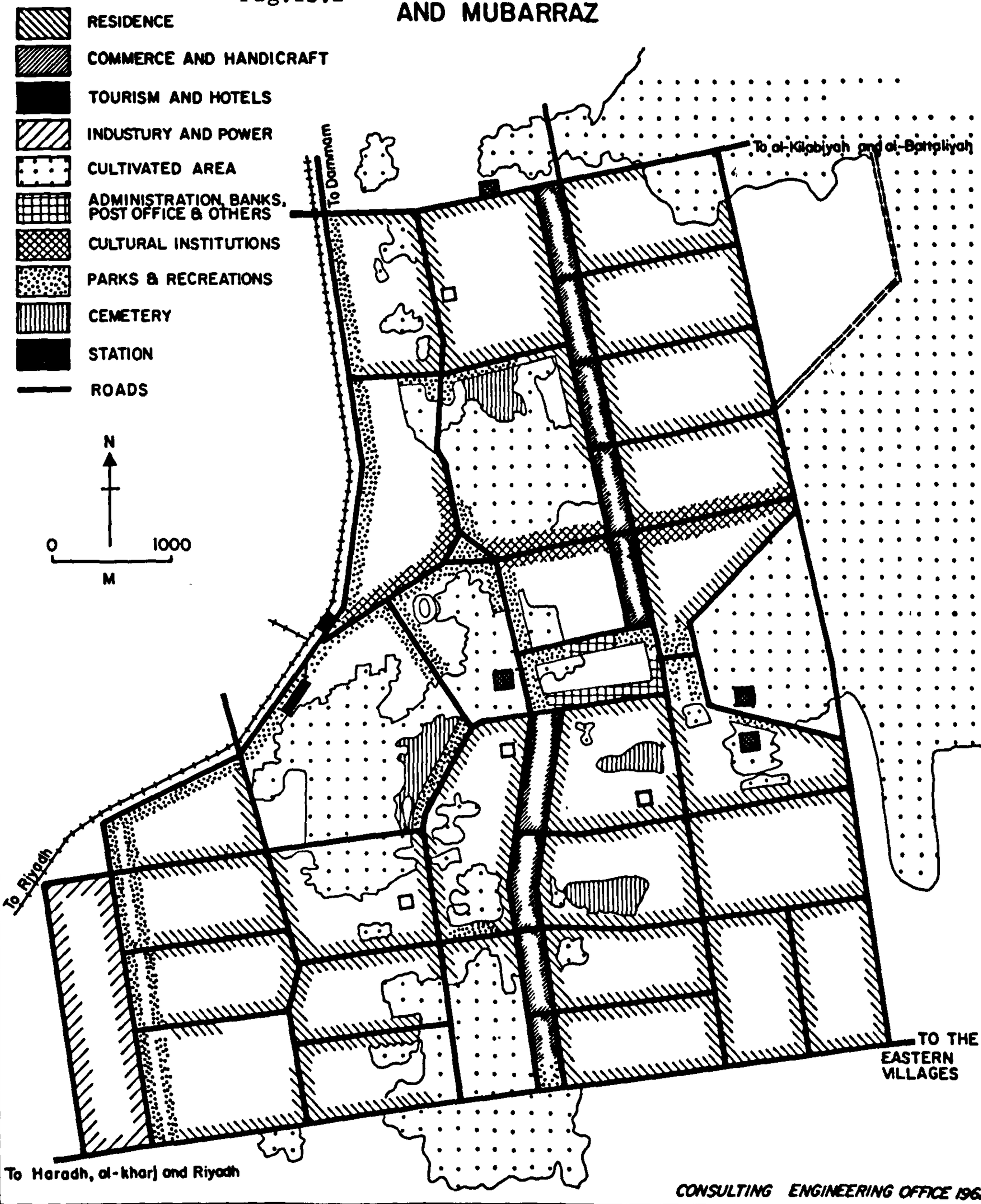
13.3 Planned Town Expansion

Formal planning was recognised then not only as the right way to control and orientate the expansion of the growing towns of the country but also to remove some parts of the old town structures which formed obstacles for the newly-proposed modern facilities in these towns. Indeed Shiber stated that "Trends toward the installation of metropolitan water and sewer systems (had) indicated the need for overall plans and these were being considered" for the first time by the Aramco Oil Company.[13]

In 1962, the Consulting Engineering Office (Khobar, Saudi Arabia) was invited to produce a development plan for Hofuf and Mubarraz.[14] They did so, and recommended an overall plan for the foreseeable future growth of the towns (Fig 13.2). No change was recommended for the existing built-up area of the two towns, except the widening of several access streets and the opening of new ones within the old quarters (Figs 13.3 and 13.4), to enable cars, which had by then been introduced in large numbers, to penetrate the old towns easily.

Fig.13.2

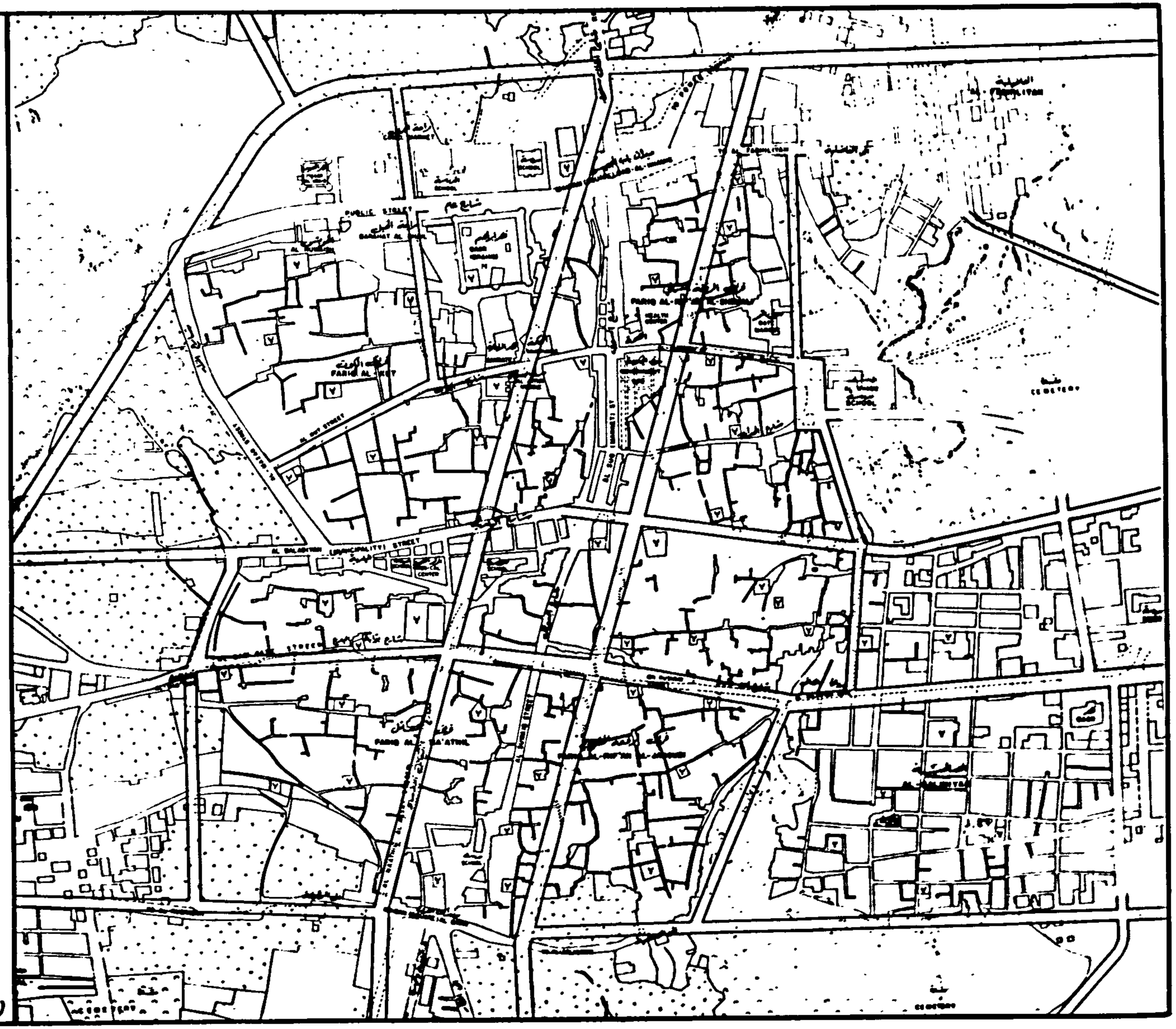
THE PROPOSED MASTER PLAN OF HOFUF AND MUBARRAZ



CONSULTING ENGINEERING OFFICE 1962

OLD HOFUF TOWN WITH NEW ROADS SUPERIMPOSED

Fig.13.3



Old Streets

New Roads

Mosque

Date Trees

Cemetery

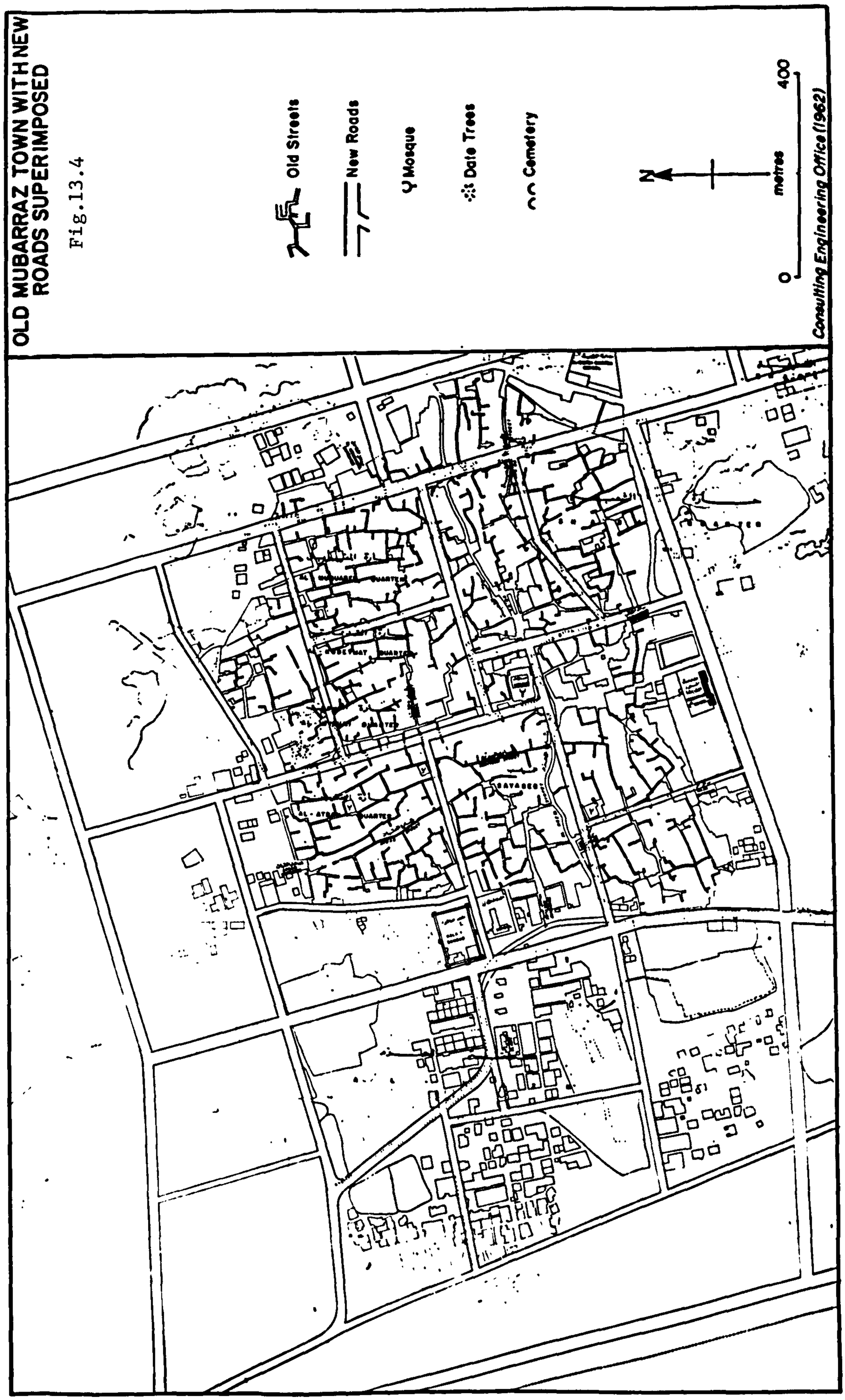
N

0 metres 400

Consulting Engineering Office (1962)

OLD MUBARRAZ TOWN WITH NEW ROADS SUPERIMPOSED

Fig.13.4



This plan was to determine to a large extent the location of subsequent developments in the towns of the Oasis. It embodied several points of lasting significance to the final form of Hofuf and Mubarraz towns.

1. It shifted the new combined centre of the towns in an approximately east-north-east direction.

2. Another west-east cultural axis was also provided. This axis is formed by a traffic artery along which are situated major cultural institutions, commercial, agricultural and vocational schools, an athletic centre, city parks, etc.

3. Near the intersection of the two axes, the Metropolitan administration centre was set up with the central Tourism and Health Services adjoining.

4. Other metropolitan provisions of the Development Plan allowed for the organisation of an Industrial Zone at the extreme south-western end of the area. This takes into consideration existing wind directions, and places the Industrial Zone next to the railway line.

5. The bulk of the grassland between the two towns is not only to be left undisturbed, but is even protected and extended to separate the Industrial Zone from the Residential Area proposed in the plan. These areas of grass land are made to run along the railway line and protect neighbouring sectors from direct exposure to the desert. More generally, grassland areas have received special consideration in the formulation of the plan, not only for aesthetic reasons, but also for purely functional purposes. It is also proposed that all main streets, as well as the cemeteries of the towns, should be planted with trees and grass.

6. The traffic system in the plan provided two different entrances to the towns - a northern one through Mubarraz and a southern one through Hofuf, while the peripheral system of roads allows for high-

speed by-pass traffic and side roads connected with the major roads separating the different residential sectors (see Figure 13.2).

7. Each residential sector was to have a selection of centrally located services - schools, shops, mosques, etc - which were designed to meet the needs of local residents.[15]

Once the guide lines of future growth had been established, construction of the new suburbs proceeded rapidly; 774 modern houses were built by Aramco Oil Company for its employees living in the two towns of the Oasis.* Most of these new houses are in the two suburbs of ar-Ruqaiqah in Hofuf and al-Hazm in Mubarraz, which were formerly Bedouin camping grounds as indicated in Chapter 9. Figure 13.5 indicates the extent of the built-up areas in the two towns between 1949 and 1968.

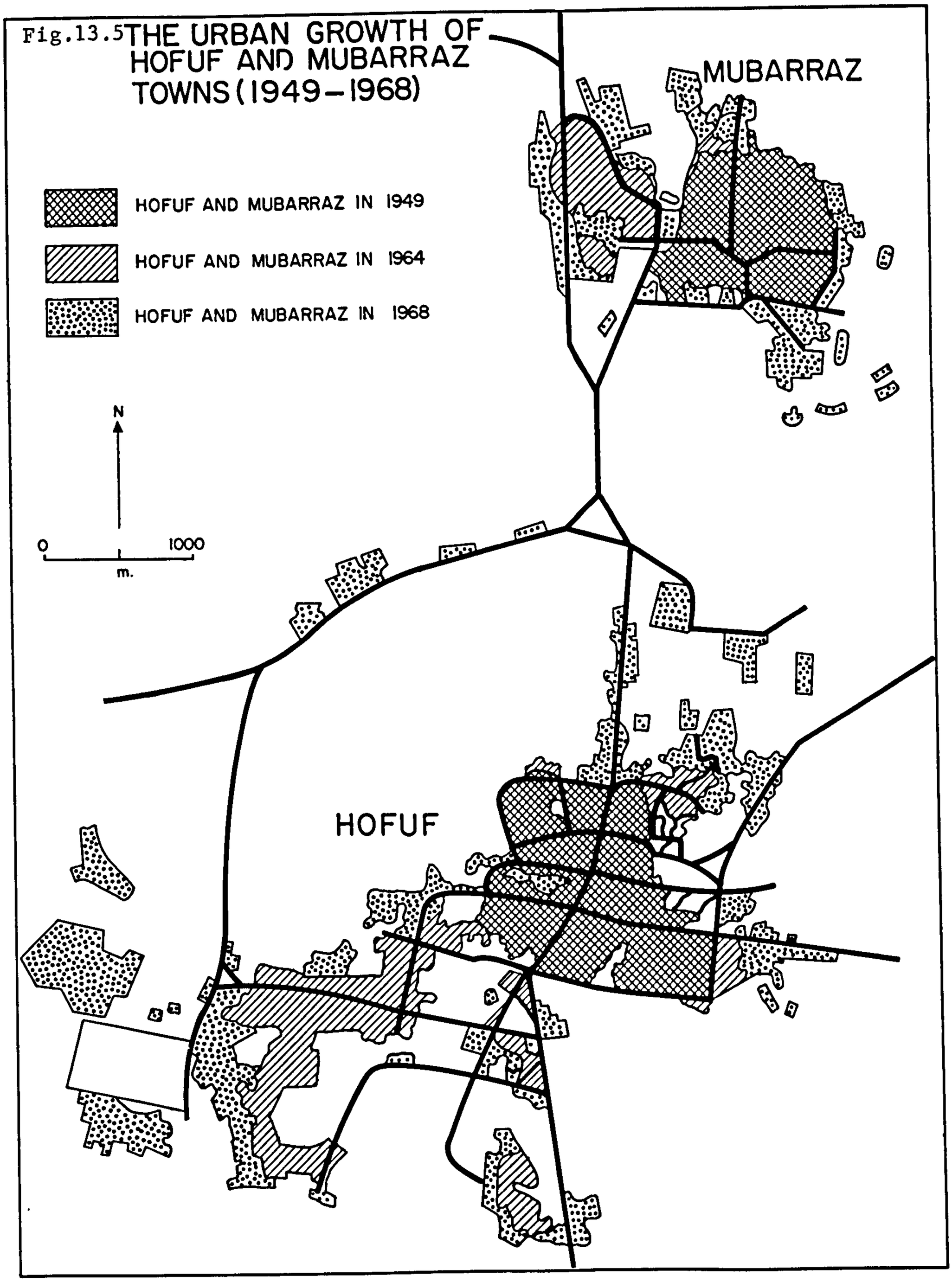
It seems that, while initial suburban development was taking place, the transformation of the older parts of these towns was also started. Many public projects, such as opening new streets through the old quarters, widening and straightening the older streets, building healthier and modern markets for meat and vegetables, etc., have been achieved for the first time in the history of the towns (Plates 13.2 and 13.3).

The development of the traditional parts of these towns was, in fact, a necessity dictated by the changing pattern of life brought about by the introduction of oil in the country. This changing pattern includes the following elements:-

1. The old insecurity prevailing in the Oasis and, indeed, in the whole of Saudi Arabia, has diminished under the common interest created by the oil wealth, for it was a lack of wealth that had encouraged the Bedouins in the pre-oil era to attack the settlers of the Oasis. The pre-oil hostility between the Bedouins and the settlers cannot be interpreted except in terms of a struggle between the haves (the settlers)

*Personal contact with Aramco Oil Company during the visit of 1972

Fig.13.5 THE URBAN GROWTH OF HOFUF AND MUBARRAZ TOWNS (1949–1968)



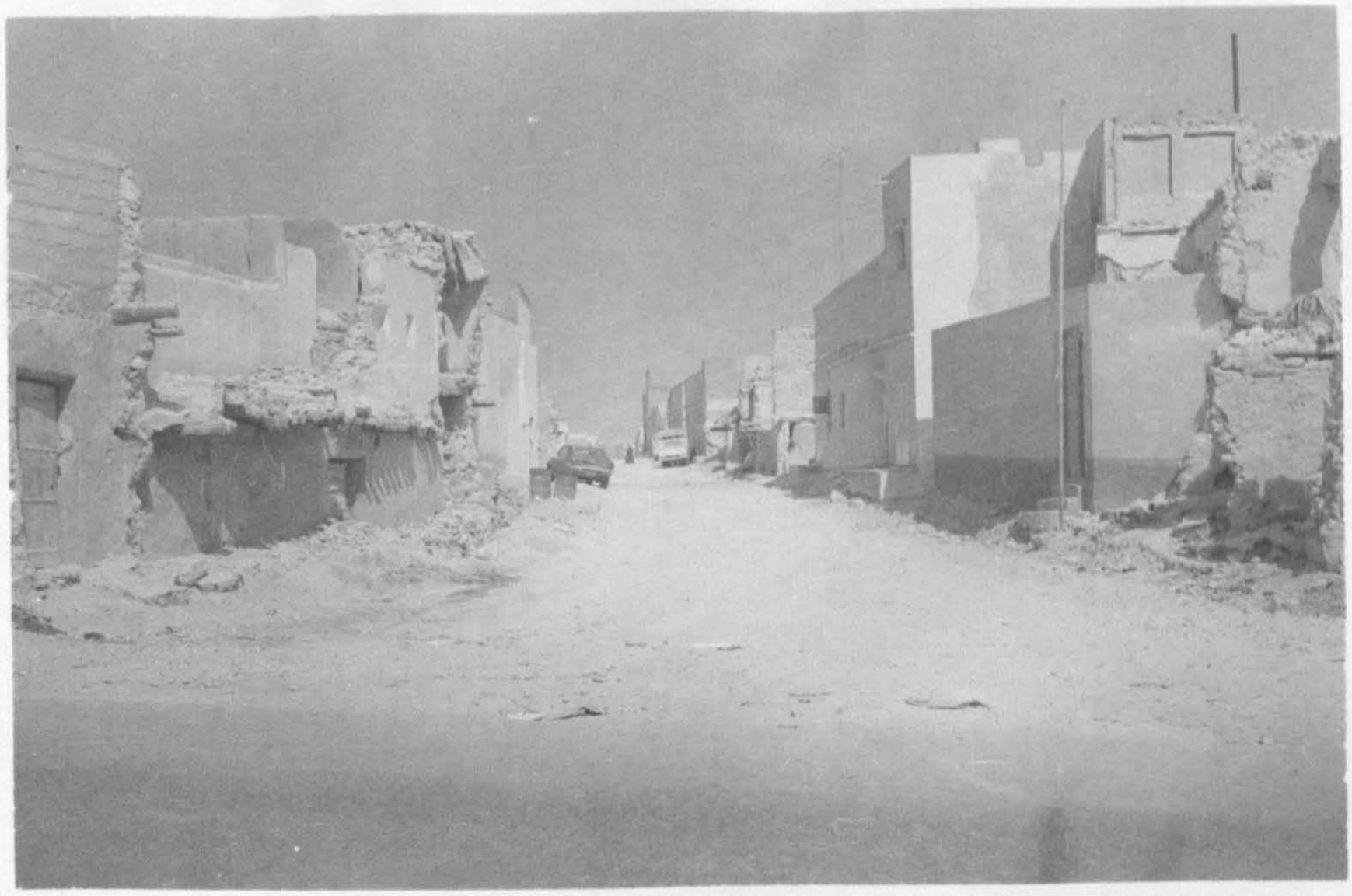


Plate 13.2 New streets opened within old Quarters of Mubarraz (above) and Hofuf (below)

Plate 13.3 New style of meat and vegetable market, ar-Rif'ah Quarter, Hofuf

and the have-nots (the Bedouins), for it sprang from a desperate attempt by the Bedouins to maintain their existence in the hard and poor environment of Arabia. The Bedouins had very little to offer the settlers in return for the necessities they themselves badly needed. The only way to get these necessities was by attacking the settlers and robbing them of their property. In order to prevent these attacks, the settlers had built their towns in such a way as to make it a difficult and costly task for the attackers to achieve their goals. This, indeed, produced the compact walled towns evident today in the old quarters of Hofuf and Mubarraz (see Plate 13.1).

The discovery of oil has not only speeded the economic development of the oilfield areas, but its impact on a national level is evident everywhere in Saudi Arabia. Those not directly participating in the oil industry reap the benefit of oil wealth through government expenditure in the public sectors. In this way oil serves the interests of both Bedouins and settlers, so that the individuals of each community can now satisfy their needs without attacking members of the other community as they did before the oil era. Thus enmity between the two groups has been reduced and their differences have diminished. Oil wealth has also enabled the authorities to enforce law and order, for long a major need, so that the matter of security is no longer a major concern. All citizens feel secure, enabling the towns to develop beyond their walls in all directions without the inhabitants of the new suburbs fearing attack. Plate 13.4 shows the new development outside the town walls of Hofuf and Mubarraz.

2. Although the sectarian conflict between Sunna and Shii'a (the two major divisions of Islam) in the past divided the two towns of the Oasis into Sunna and Shii'a quarters, it is now increasingly regarded as an issue of the past, even though the differences between the sects

Plate 13.4 Aerial View: expansion of Mubarraz and Hofuf in 1968

continue. The spread of education within the two communities, which has become possible only in this era of oil, is probably the reason for the decrease of hostility between the two groups. Nevertheless, the two groups still occupy different quarters of the two towns, not only in the old cities but also in the newly developed areas (Fig.13.6). However, this is less a sign of active conflict than of uncertainty felt by the two groups about their present and future relationship.

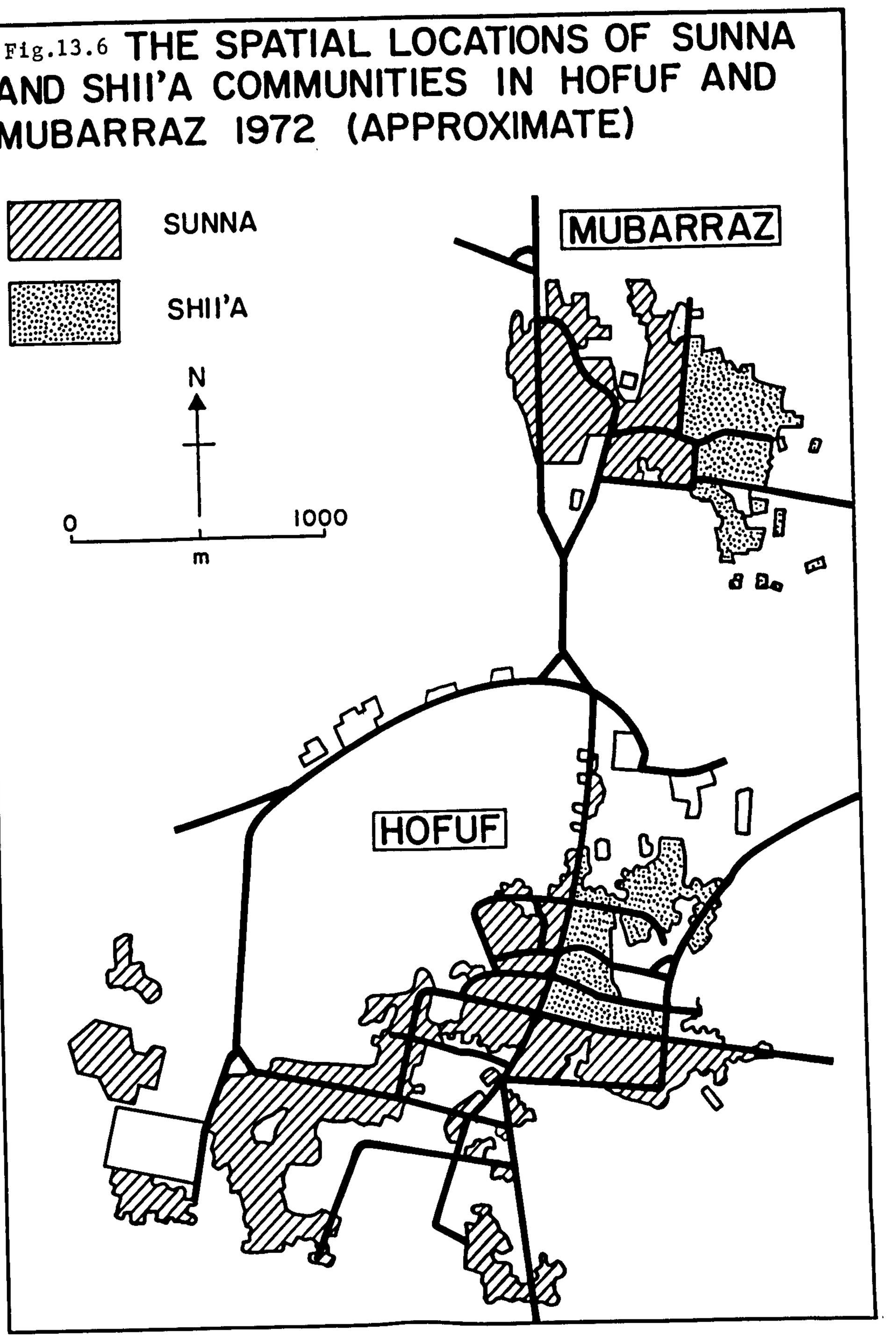
The Shii'a traditionally resided in the eastern parts of the two towns, for they were mostly farmers who preferred to be near their date gardens in the Oasis. The Sunna occupied the western and the south-western parts of Hofuf, as well as the whole western part of Mubarraz town, for they were originally Bedouins and therefore preferred the parts of the towns facing the desert.

The new expansion of the two towns took place mostly in these directions; the Shii'a expanded towards the centre of the Oasis whilst the Sunna expanded towards the deserts to the west and south-west of these towns.

The change in the attitude of the two groups is, in fact, slow, for the conflict between them has deep roots in the long history of the two sects. Their principles cannot easily be dropped. What oil wealth has done is to soften the attitude of these communities towards each other. The two have, according to Sheikh Baqir Abu-Khamsin (the head of the Shii'a sect), even mixed, so that in some parts of Hofuf and Mubarraz towns the two groups are living side by side as neighbours as well as friends.[16] This would have been impossible in the pre-oil era.

Unfortunately, it is not possible to identify precisely the areas where the two communities have mingled, for no census has been taken in the two towns. Moreover, the sensitive nature of the subject also makes enquiries very difficult. It seems, however, that the mixing has taken

Fig.13.6 THE SPATIAL LOCATIONS OF SUNNA AND SHII'A COMMUNITIES IN HOFUF AND MUBARRAZ 1972 (APPROXIMATE)



place on the common borders of the two communities.

13.4 Some changes in the town structure and morphology

It appears from Chapter 3 and 9 that Al-Hasa towns in their old functions, structures and morphology are representative of typical Islamic towns of Arabia. The recent changes which have occurred in the Islamic towns of the Middle East, explained in Chapter 4, have also been felt to varying degrees in the Oasis towns, according to the economic conditions which have affected these towns after the coming of oil to the nearby areas. The variations in the recent changes of the Islamic towns reflect the economic plight of the country in which each town is located. Those located in the oil producing countries have experienced more dramatic changes in their traditional structure and morphology than those towns of the non-oil producing countries. Kuwait city and San'a, the capital of the Yemen Arab Republic, are typical examples of such extreme cases (see Chapter 4). Examples are also found within each of the oil producing countries, as in Saudi Arabia, some of whose towns, for instance, Dammam or Riyadh, have experienced considerable changes in their old structures and morphologies,while others, like Hofuf and Mubarraz, have changed little. The Oasis towns do share with the other changing towns of the Middle East a lessening of the sharp divisions for religions, business, residential and defence purposes which characterised them in the 1930's. In fact, a mixture in the land use of these towns has begun to appear, and it is sometimes difficult to determine the primary function of a given area particularly in the town centres of Hofuf and Mubarraz. Such changes might have been brought about by the improvements in the transport system and the economic conditions of the area already explained in Chapters 11 and 12. These changes have now affected the whole pattern of life in the area.

Although the al-Qaisariyahs (the covered markets) of both Hofuf and

Mubarraz towns still exist physically and functionally, they are less important as commercial centres than they were in the 1930s (see Chapter 9). Their places have been taken by the newly-emerged commercial centres along the main streets in both towns.[17] The Thursday Market which used to be held in the old commercial centre of Hofuf in front of al-Qaisariyah has now moved completely to the eastern part of the town on a space between the old Quarter of ar-Rif'ah ash-Shamaliyah and the new Quarter of al-Fadhiliyah. This removal was necessary to release the town's main street for motor traffic. The same has occurred in Mubarraz town where the Wednesday Market which used to be held at the southern part of al-Qaisariyah near al-Maqsab Gate, was removed to a rough space near the southern part of the town.

Shops located along both sides of the main streets of both towns are now occupying the ground floors of 3-6 storey buildings while the other floors of these buildings are being used to accommodate middle class tenants and as offices.

The old street pattern, designed in the pre-oil era to meet the demands made by such things as the need for security, the climate, family ties and the old means of transport (donkeys), is certainly not adequate for today's daily needs. Peace, in this era, has replaced insecurity; and cars, which were introduced in large numbers only in the 1950's, have replaced donkeys as a means of transport inside the towns.[18] The effects of the climate have been reduced by speed of travel and by the air-conditioned cars which have only recently become available for public use. Family ties have also weakened, for there is no need for family or tribal protection, as was the case in the pre-oil period. The role of the family or the tribe has been taken over by the government, which enforces law and order, and to which loyalty is encouraged.

The compact structure of the old quarters and the crooked, narrow

streets, which do not always allow access to the other areas, make it impossible for modern facilities, such as electricity, domestic water networks and sewerage systems, to penetrate these old quarters. It is also inconvenient for car owners to park their cars at a distance from their houses and walk 500 metres or more every day between their housea and the car park.

For these reasons, the structure of the old quarters of these towns has changed dramatically to suit the new pattern of life created by the coming of oil. The traditonal town walls which existed up to 1952, as indicated by Vidal,[19] were demolished, probably in the late 1950's, and early 1960's, and replaced by ring roads, paved, electrified and sometimes planted with trees (Plate 13.5 and 13.6). Considerable numbers of the houses in the old quarters have been demolished since 1962, in accordance with the Development Plan, to make room for the proposed new streets which will create transport arteries and make these quarters accessible by car.

As Figure 13.7 shows, the new development within the old towns has taken place only along these new streets, penetrating the old built-up area of the old quarters of these towns. The traditional streets untouched by these developments retain their traditional character, though some of them which are straight and wide enough to allow access to motor vehicles have been paved and provided with electricity (Plate 13.7).

The growing number of motor vehicles (probably over 500 for Hofuf and 300 for Mubarraz in 1972), together with the rise in population, were good reasons for embarking on a programme of town development. A further reason is the aim of the government to distribute the oil wealth throughout the private and the public sectors of the towns' economy. The large-scale purchase of land in the old quarter of the two towns by the government, together with the benefits brought to the merchant comm-

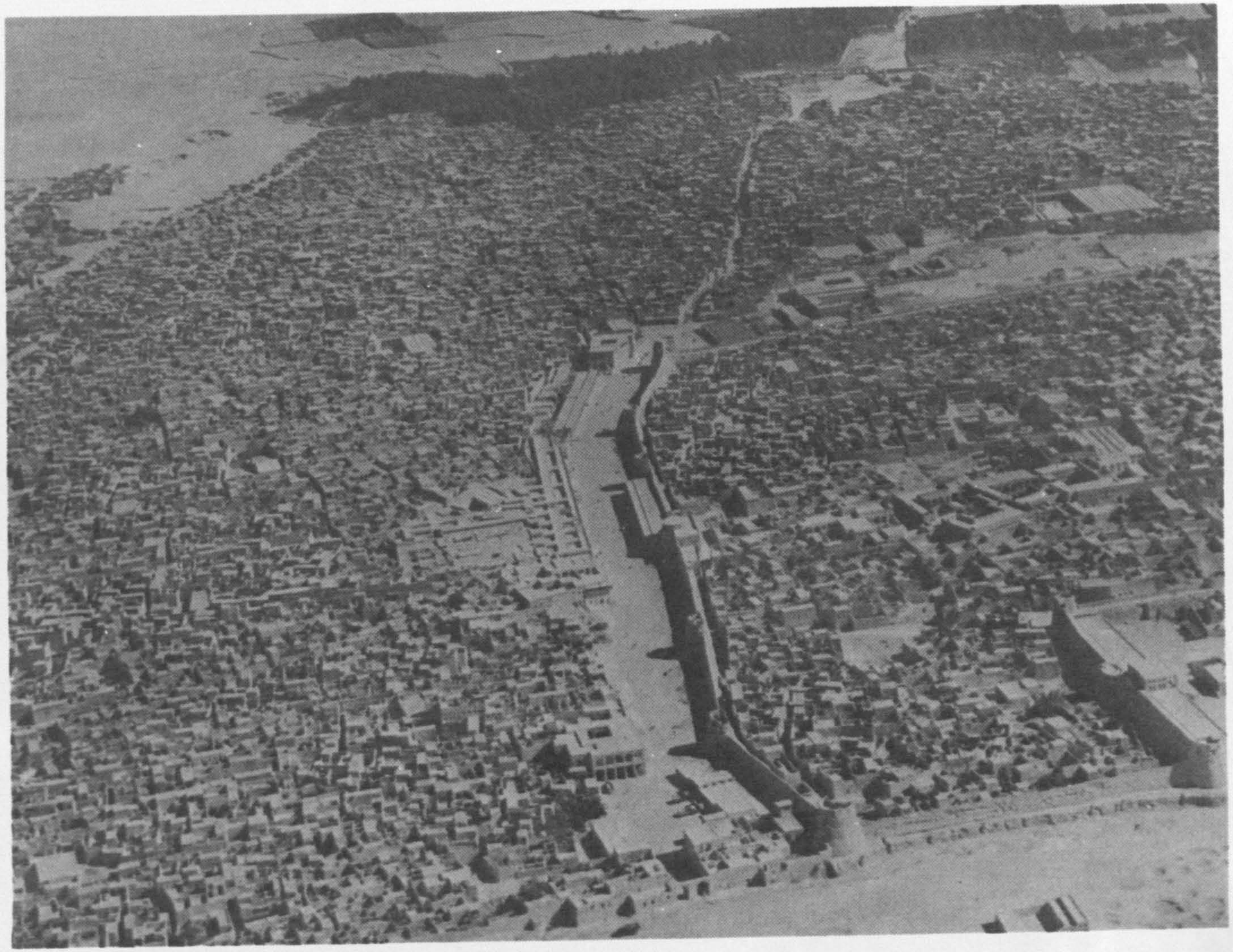


Plate 13.5 Old wall and fortifications, Hofuf

Plate 13.6 Hofuf as it became in 1971. The old town wall demolished and replaced by ring roads, now paved, electrified, and sometimes planted with trees

DEVELOPMENT OF THE OLD TOWN OF HOFUF.

Fig.13.7

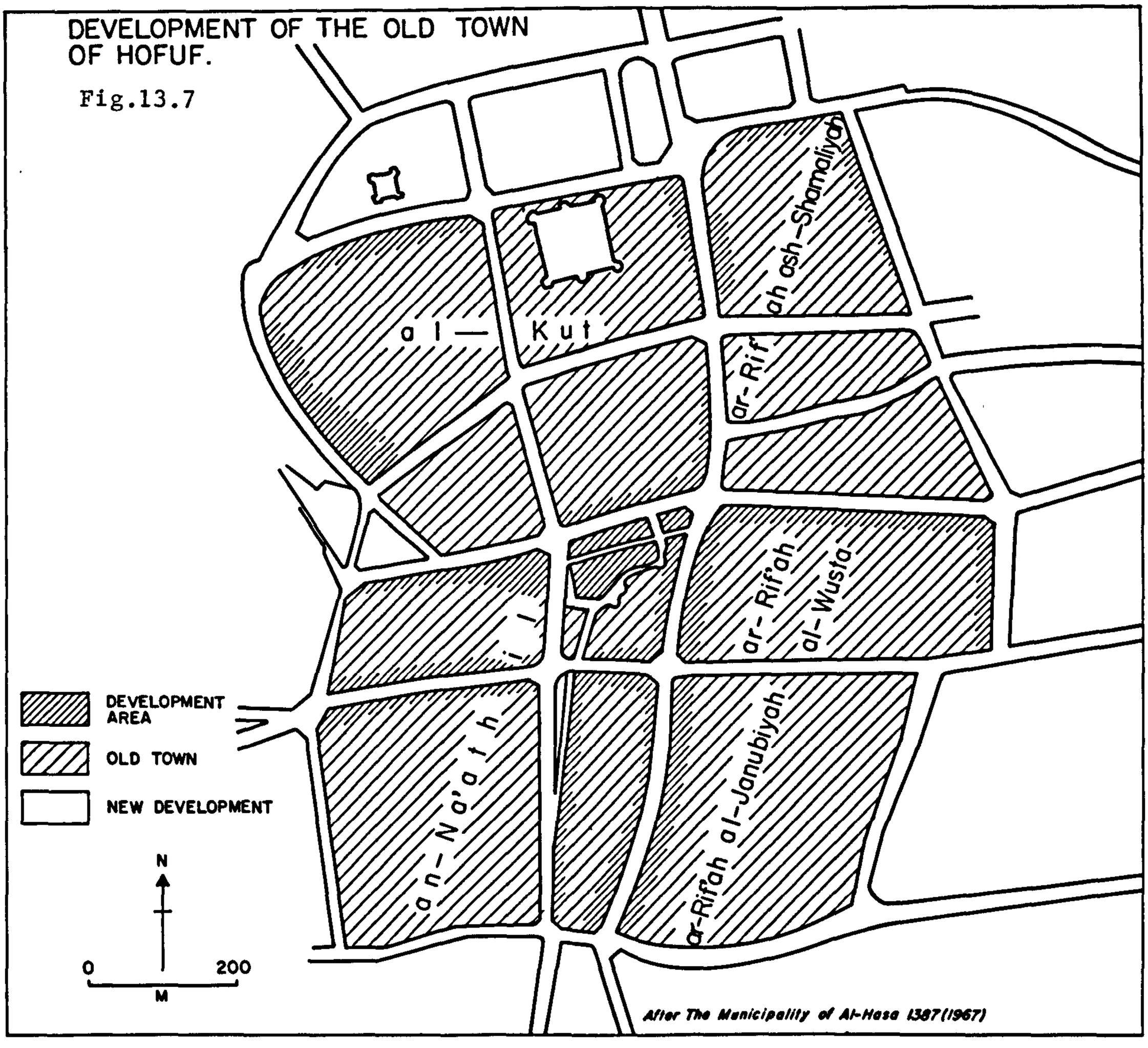


Plate 13.7 Shari'a al-Bahuth, a street in ar-Rif'ah Quarter, paved, electrified, though retaining some traditional characteristics

unities through contracts for government construction projects, were important features of the fiscal policy of spreading the oil wealth amongst the inhabitants of both towns. This land and property acquisition by the government warrants close attention, not only because of its effects on the economy as a whole, but also because of the changes which it has brought in the structure of the two towns of the Oasis.

The rapid development of the old quarters carried out by the government has, indeed, been reflected in the changing value of the land in these areas, which had risen from 400 to 700 Saudi Riyals (£50-88) per square metre in 1962[20] to almost 1,000 Saudi Riyals (£125) in 1974.[21] In September 1975 the author carried out an investigation into land-prices in Hofuf and the findings are listed in Table 13.1.

This Table shows that land-prices in Hofuf and perhaps also in Mubarraz have risen to unimaginable figures as a result of the Development Plan which led to the demolition of a considerable number of houses in the old quarters. Such demolition led to a housing shortage and at the same time compensation paid by the government to the public was generous enough for a large sum of money to find its way into the local economy which led to the inflation of prices, since those who were selling could ask whatever price they wished. In fact, the profits from trading in land is so high and rapid that it has attracted all sections of the population* who are now engaged in buying and selling land. The price of land is a matter of concern not just among the inhabitants of small rural communities but indeed to all those who live in countries which have been recently affected by the development projects resulting from government income from oil. This phenomenon has not yet come to an end in the towns of the Oasis as a result of building programmes. In fact building in

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* In summer 1976 an informant, who has just arrived from Hofuf, says that two years ago he bought a plot on the main road to the town's airport where one sq.metre cost him 170 Saudi Riyals or £26.15. He said that it is valued now at 3,000 Saudi Riyals or £461.54

Table 13.1

Land Prices in Hofuf during September 1975[22]

Area Location	Saudi Arabian Riyal* Per sq.metre
Shar' as-Suq شارع السوق	30,000
Shar' al-Baladiyah شارع البلدية	12,000
Shar' al-Malik شارع الملك	4,000
Shar' al-Kut al-Jadeed شارع الكوت الجديد	1,200
al-Fadhliyah الفاضلية	1,200
Ain Ali عين علي	1,000
al-Mazru'iyah المزروعية	800
ar-Rifai'ah الرفيعة	800
ar-Riqaiqah الرقيقة	600
Samhah سماح	250
al-Mansuriyah المنصورية	250
ath-Thlaithiyah الثليثية	200

Note: The above quoted prices are for plots located on the main streets only.

*One pound sterling = 6.50 Saudi Riyals approximately.

these towns is still well below the level of demand. The accommodation problem is made worse by the influx of foreign labourers, technicians and executives who are employed by companies undertaking government projects financed by oil revenue. No accurate figures are available, but observation in the relevant areas reveals the large size of this problem particularly in Hofuf.

These new arrivals as well as the new trends of population movement from old houses to those newly-built in the new suburbs, have also contributed to the high demand for housing.

This matter becomes further complicated by the shortage of labourers needed for building purposes. The Saudi, for social reasons, disliked manual work in the past and even now not many of them are willing to undertake it. In fact the majority of them have been absorbed recently by the many jobs provided by the government and private enterprise. Some of them have even established their own private businesses. In all cases these employments are more profitable and certainly more respectable in society than the manual work of constructing houses.

However, the government has recently allowed many foreign skilled and, particularly, unskilled labourers into the country, mainly from Yemen, Arab Republic, Egypt and Pakistan, to participate in the recent development of the country. This has not solved the problem of housing. On the contrary, the new arrivals have occupied the few available buildings, increasing the demand for more accommodation.

The wages of the labourers have also risen dramatically from 8 Saudi Riyals per day for an unskilled labourer in 1962[23] to 35 S.R. in 1975[24], an increase of about 337.5% in only 14 years. Similarly the skilled labourer's wage has also risen during the same period from 15 S.R.[25] to 60 S.R.[26], an increase of almost 300.0% for the same period.

The cost of building new houses has not only been influenced by the

dramatic rise in the price of the housing plots or the wages of the labourers but also by recent rises in the cost of construction materials. Within less than a year the price of one local sack of cement rose from 10 S.R. in September 1975[27] to 25 S.R. in July 1976.[28] This situation is not present alone in the towns of Al-Hasa Oasis but also in the other towns of Saudi Arabia. The present housing problems in the country may be the reason behind the recent establishment of a Ministry of Housing which is expected to deal properly with such problems.

Generally speaking the tremendous changes now taking place in the economy and the social structure of the Oasis are tending to bring about the decline of the old structure of the two towns, in common with the other towns of Saudi Arabia. The availability of modern transportation has caused a sprawling expansion of the towns along the asphalted roads and a vast expanse of asphalt and concrete has also developed on the sides of these roads (Plates 13.8 and 13.9). The old quarters soon lost their importance and the wealthy people have deserted them to live in the new residential areas along asphalted streets. As a result, many parts of these quarters have deteriorated without maintenance. However, as prosperous families move out of these old quarters they are replaced by almost 3-4 thousand migrants* from the surrounding villages and other parts of the country, as previously indicated. Today the towns of the Oasis display their prosperity in newly constructed offices, public buildings, luxury apartments and suburban villas. As the modern sectors expanded rapidly, new residential areas came into existence and the process of suburbanisation began.

The change has affected not merely the overall structure of the old

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*It is not possible to give an accurate figure for migrants who left their villages to live in the older parts of both Hofuf and Mubarraz, for no census concerning population movement between the villages and towns has ever taken place in the Oasis. Thus the above figures are a rough estimate based on several interviews carried out in both towns and observations during the visits to the area.

Plate 13.8 Wide street in the centre of Hofuf town

Plate 13.9 Asphalt and concrete became the characteristics of the main streets of Hofuf

built-up areas of such towns, but also the construction materials, design and decoration of the new houses.

The coming of oil has resulted in the use of cement for the first time in the construction of houses in the oil areas of the Eastern Province. The construction of Dammam harbour in 1951 enabled Aramco Oil Company to import cement in large quantities: firstly, to build facilities for oil operations; secondly, to build company offices; and thirdly, to construct buildings designed to accommodate their employees in accordance with the housing scheme introduced by the company in 1951. The railway as well as the motor vehicle was introduced for public use in the early 1950's, as stated before. Cement was transported from the oil port of Dammam to the more remote communities, such as Al-Hasa Oasis. The introduction of cement to Al-Hasa Oasis and the availability of capital enabled the inhabitants to use cement for the first time in the construction of houses, shops and governmental administrative offices. When the demand for cement grew, a cement factory was established in the north-western part of the Oasis, in 1961, to provide the quantities needed in the markets of Al-Hasa Oasis and other parts of the Eastern Province. It was only then that the shift in construction material occured, local sun-dried bricks of clay being supplanted by imported and latterly locally manufactured cement. Consequently, it has become fashionable to use cement in the construction of any new development, whilst the use of local materials is regarded as a retrograde step. The result has been that all the new developments in the two towns have used cement, while the older parts have remained built of the local materials.

Cement is much more convenient in house construction than local bricks, for it is more solid, cleaner and more manageable. The disadvantage of using cement in the construction of housing in the Oasis is that it quickly conducts the outside heat to the interior, but this

problem has been overcome by the installation of air-conditioning equipment, which has only recently been introduced with the coming of oil. Although it is very expensive to install, it seems that people are far better off at present, so they can now afford things which were beyond their reach a few years ago.

House design, the product of long experience of the environment, has also changed. The old, traditional plan designed in the past to meet certain demands, as mentioned in Chapter 9, can no longer be accepted, because oil has brought a more sophisticated technology, enabling man to control his environment. The house plan need no longer be dictated by environmental factors. Air conditioning equipment can cool a house in summer and keep it warm inwinter: hence there is no need to keep the courtyard (which also has the disadvantage of bringing dust into the house). Modern equipment has superseded it.

The traditonal courtyard has now become a central sealed hall, separated from outside. Rooms are arranged in an orderly manner around this central hall, while windows open on to the outside world for fresh air and light, but keep out intruding eyes by being above the height of the average tall man (Plate 13.10). If the house has more than one floor, the position of the windows will depend on the distance between it and the house opposite. If the distance is short enough to allow the inhabitants of the two houses to see each other, the windows will probably be small and located high in the middle of the wall for privacy (Plate 13.11). Some houses even have wooden shutters in front of their windows through which air and light can come: a family can thus enjoy the pleasant scene outside without being seen (Plate 13.12).

These modifications have occurred in the new developments within the old built-up areas, but the house design in the newly developed suburbs has completely changed. The traditional house plan has been

Plate 13.10 Windows in the ground floor are small and placed high in the wall for protection against the intruding eyes of the passer-by

Plate 13.11 The size and position of first-floor windows depends largely on the distance between them and the house opposite, and the expected future development of the area opposite, as well as on the attitude of the occupier

Plate 13.12 A new house with wooden shutters in front of the windows, through which the inhabitants can enjoy the view without being seen

Plate 13.13 A new style of house introduced recently in Al-Hasa Oasis by Aramco Oil Company for its employees

replaced by an American style introduced into the area by Aramco Oil Company when it housed its employees living in the two towns of Hofuf and Mubarraz (Plate 13.13).

The differences between the two styles in the towns of the Oasis are, first, that the traditional local house opens inwards, receiving its air and light through the courtyard, round which family life centres. By contrast, the new-style house opens outward, allowing air and light to enter from outside, where trees and grass can be planted, as may be seen in the above plate. Secondly, rooms which would have opened inwards on to the courtyard in the traditional style are now arranged around a central hall or along a small corridor and open outwards, providing air, light and views of the garden surrounding the house. Thirdly, the garden fence is built tall enough to prevent passers-by from seeing inside the house (see the above plate).

Traditional decorations which were commonly used before the oil period have also disappeared in the newly built houses and governmental offices. The Al-Hasa arch, which was the main characteristic of Al-Hasa buildings for centuries, has declined in importance (see Chapter 9). It is no longer used in new buildings. If the old towns of the Oasis were to develop quickly (as happened, for example, in Kuwait), the arch of Al-Hasa might disappear completely. Fortunately, development in the old towns of the Oasis is slow, so that the arch is still preserved in the old buildings, as is seen in Plate 13.14.

Other decorations, such as those in Plate 13.13, are similarly not features of newly built houses. This disappearance is not because the designs are ugly, but rather because people's tastes have changed and coarsened. They regard, rightly or wrongly, anything new or foreign as a sign of progress and anything old or local as backward.

To sum up briefly some of the relevant points discussed in this

Plate 13.14 The Al-Hasa arch, described by earliest writers, is still preserved in as-Suq Street of Hofuf

Plate 13.15 The old decoration of the houses is no longer to be found, except in the older houses

chapter, one could say that the economic development of Saudi Arabia, which has been recently stimulated by oil revenue, has affected not only the economic conditions and the social pattern of the inhabitants but also the old structure and the morphology of their towns. For instance, the old sharp distinction in the land use of Al-Hasa towns, described in Chapter 9, is no longer made these days. Like the modern Middle Eastern town, explained in Chapter 4, the Oasis towns are characterized now by admixtures in their land use as a result of the recent changes brought about by the coming of oil. For example, commerce, industry, other businesses, religion, public services and the residential areas now exist side by side everywhere in the towns, mainly along the newly opened avenues which cut through the old structures of the Oasis towns. Such functions are now being accommodated in new buildings along both sides of these avenues. These buildings consist of 3-5 storeys where the ground floors are usually occupied by commercial shops, offices and other businesses. The other floors are often used as residential apartments. Such buildings, which have been built with cement and concrete, are completely different in design, height and colour from the rest of the old houses of the towns which are masked behind them.

Some new buildings for residence or services have also been erected on some of the vacant spaces within the old quarters. So that houses of contrasting design sometimes stand side by side as shown in Plate 13.10.

The recent expansion of these towns outside their old confines has been influenced by the position of the old cemeteries which form a broken ring round the old town areas. The extension of the agricultural lands, round some parts of these towns, has also affected the orientation of such expansion. Consequently new town expansion has occurred on the waste land adjoining the old towns. These expansions render the towns

almost shapeless as shown on the figures and plates of this chapter.

The rise in urban land prices has now led to the encroachment of the built-up areas upon the agricultural land for it becomes more profitable these days to sell the land for urban development than to cultivate it.

The differences between the houses in the old towns and the houses of the new expansion is as follows. Houses located within the old borders of these towns fall into two categories. (1) Tall, modern concrete structures alongside the new thoroughfares, built to international standards. (2) Old houses located along the old twisted narrow streets deep inside the old quarters. These often consist of 1-3 floors and are built with the traditional material (limestone and sun-dried bricks) and according to the local old design. These houses still form the majority of the housing units in both towns.

Houses in the newly planned expansion are being built according to the villa style with garden and a surrounding cement and brick wall. The villa houses are often of one or two floors only. They are all being built of cement and concrete along wide and straight streets.

However, some huts exist on the unplanned areas at the south-western part of Hofuf and along the main road to Dammam-Riyadh in the western part of Mubarraz towns. Such huts are being erected with every available material by the poor Bedouins and the villagers from the different parts of the country.

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CHAPTER 14

THE IMPACT UPON THE RURAL SETTLEMENT

14.1 The general condition of the village during the early years of the oil era (1938-1950)

In the traditional period, most villages of the Oasis were either surrounded by walls or located inside the date-gardens for protection against Bedouin raids. To ensure their security and to protect their common interests, the villages were built in groups according to the physical and human factors described in detail in Chapter 10. When the country was eventually unified under the authority of the late King Ibn Saud in 1932, law and order were enforced and the Bedouins were no longer able to carry out their regular raids against the villages. Walls were left in a very bad state of repair and the villages could be entered from any direction. However, the villages did not expand beyond their traditional limits despite the improvement in security. The reason is that, although the security of the villages had improved dramatically, their economic condition had not. The natural increase of the population was accommodated within the limit of the villages for economic and social reasons. The uncertainty of the continuity of peace between the villages and the Bedouins also encouraged the inhabitants of these villages not to build new houses outside the limits of the village walls for fear of renewed Bedouin attacks against them in future.

When the oil explorations started in the early 1930's in parts of the Eastern Province distant from Al-Hasa Oasis, the rural population of the Oasis continued to live as their forefathers had done. They did not show any interest in participating in these new activities, but remained contented with what they could get out of their soil. As oil was proved in commercial quantities in 1938, the attraction of participating in the oil operations grew stronger than before and the oil acti-

vities could no longer be ignored. But, because some of the villagers had never ever been to some parts of their own Oasis,[1] participation in the oil operations 150 km. away was indeed considered an adventure. Nevertheless, whilst some were not prepared to take part in that adventure, others started to seek their fortune in this new enterprise and accepted employment with the oil company. There, in the oilfields, they found themselves confronted with technical work and a way of life which were, to say the least, strange. The considerable economic gains generated from working in the oilfields tended to be offset by the cultural values that the oil workers attached to their villages and by their family responsibilities. Indeed, this fact is also manifested in the very high turnover among oil company employees, which reflected their discontent and the difficulty they found in adjusting to the changes demanded of them. Pauling[2] found that during 1945 alone, 7,820 (91%) of the employees left out of an average work force of 8,469. But as the process of adjustment to technical work in the oil industry gradually improved, the dropout rate in the oil company dropped sharply to only 3% in 1959 and to almost nil in 1972.[3] This means that Saudi Arabian employees from Al-Hasa Oasis and other parts of Saudi Arabia have accepted employment in the oil industry permanently and now regard technical work as a way of life.

People thus started to move out of their villages towards the oilfields and towns in the other parts of the Eastern Province. According to Pauling,[4] Aramco hired during the period of 1945-1959 alone 56,000 men in order to maintain its operations. This figure reflects the extent of the population movement caused by the introduction of oil in the country, though much of the movement, as previously mentioned, was essentially short-term in nature. The relative economic prosperity enjoyed by the towns of the Oasis in this era has also attracted more

Plate 14.2 Some growth seen in al-Jishshah village as a result of participation in the oil industry

Plate 14.1 The plight of al-Munaizilah village as a result of an almost total lack of participation in the oil industry (see Table 12.4)

people from the villages to migrate to the towns of the Oasis or elsewhere for better jobs and better living. The result has been that the population of many villages has decreased and their agricultural economy has deteriorated. The impact on some of these villages was so great that a number of them, like al-Jishshah, al-Jafr and al-Fudhul, physically declined, and others, like at-Tuhaimiyah and al-Mazawi, even fell into decay.[5] A number have also experienced little growth or none at all as shown in Plates 14.1 and 14.2.

14.2 The Impact on Village Growth

It seems that growth has occurred only more recently, when some of the inhabitants of a village have left to work directly or indirectly for the oil industry (see Chapter 11 and 12), and have subsequently returned; this has been the case in al-Jishshah, al-Uyun, at-Taraf, ash-Sha'bah, al-Jafr and al-Kilabiyah. Other villages, where none of the inhabitants were actual participants in the oil industry, have stagnated or even decayed. Thus, some villages which at first suffered physical stagnation or decay as a result of emigration to the oilfield, have now started to receive back economic gains as well as new ideas through the frequent remittances and visits of their migrants (see Chapter 12).

Villages have expanded beyond their limits for slightly different reasons. First, through the Aramco Oil Company Housing Scheme for its employees living in these villages. Secondly, through the various government services to such villages, services which the government would not have been able to provide without the huge earnings from oil. Thirdly, through the individuals who left their villages to work privately in the oil centres. Fourthly, through the development projects carried out in Al-Hasa Oasis. Fifthly, through the abandonment of the habit of residing with the whole family in a single large house.

In the first case, the oil company has contributed directly to the growth and modernisation of villages, some of whose inhabitants work directly for the oil company. According to Aramco,[6] the company committed itself in 1950 to building modern houses for employees who had spent ten years in its service, in locations chosen by the employees themselves. Consequently most of the employees of Al-Hasa Oasis chose to build their houses in the villages from which they had come, presumably because of family ties as well as for prestige in the village community. By August 1972, it was calculated that the company had already built 299 houses in the different villages of the Oasis, as shown in Table 14.1. Most of these new houses were built in the three villages of al-Jishshah, al-Uyun and al-Jafr, the original homes of the bulk of those Aramco employees who had come from the villages of the Oasis.

In the second case, the government through its various departments took the initiative in administering these villages and providing services for the welfare of their inhabitants. Consequently scores of buildings were erected in many villages in the Oasis to serve these purposes. Unfortunately, there are no official data available to indicate exactly how many buildings were built by the government, but they include schools, health centres, police stations, social development centres, mosques, etc.

In the third case, individuals who left their villages to do contracting work in the oil centres have been returning since the early 1950's to build permanent residences in their villages of origin, though still working outside. They have perhaps done so because of family obligations as well as to compete for social prominence with the older leading families of the villages.

In the fourth case, the recent development projects in Al-Hasa Oasis, for example Drainage and Irrigation, Sand Stabilisation and other

TABLE 14.[1]

Distribution of Houses built by Aramco Oil Company for its Employees living in the Villages of Al-Hasa Oasis[7]

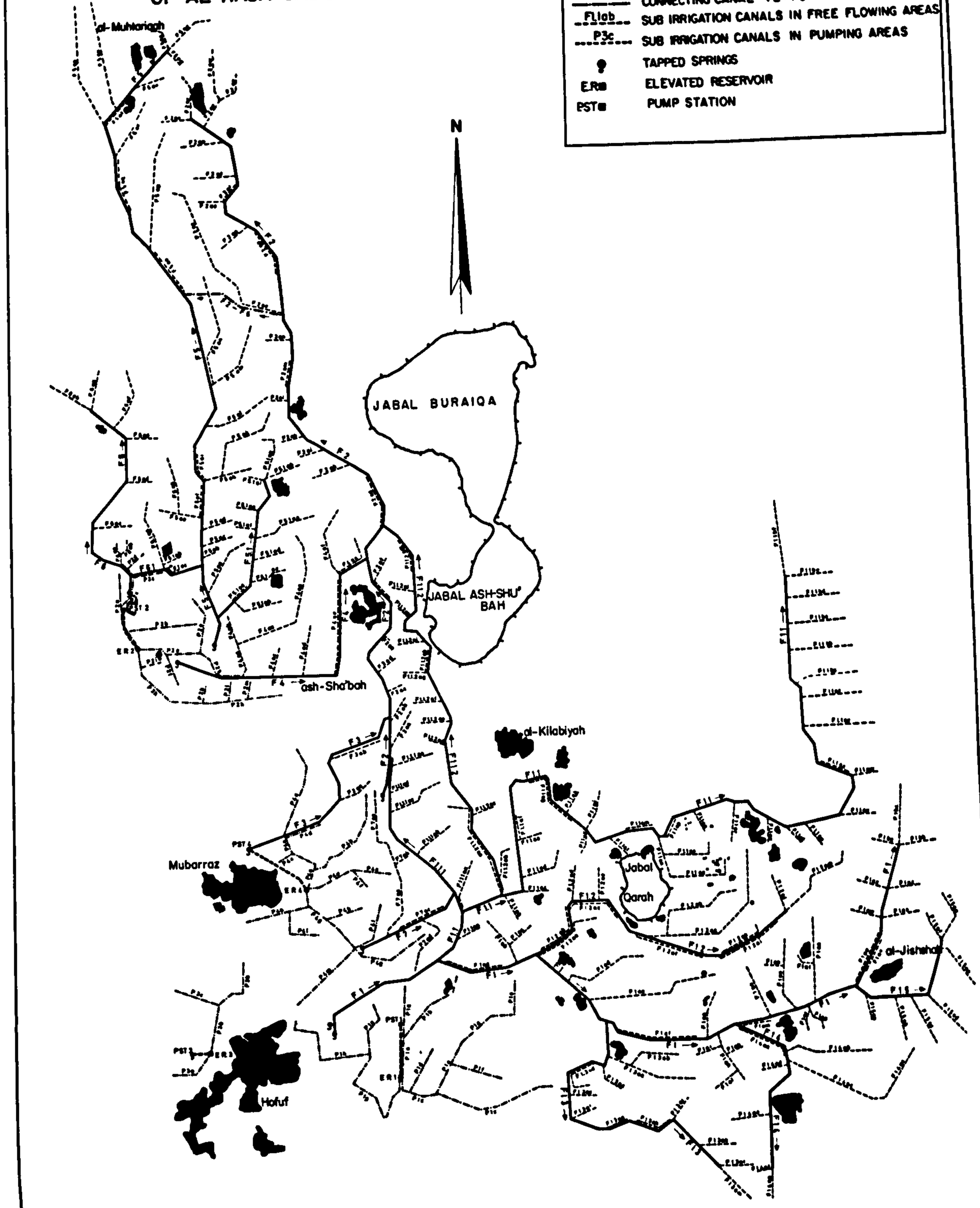
Settlement	Number of houses built by Aramco	Settlement	Number of houses built by Aramco
al-Fudhul	2	al-Umran al-Janubiyyah	1
al-Hulailah	3	al-Umran ash-Shamaliyyah	14
al-Jafr	37	al-Uyun*	88
al-Jishshah	95	ar-Rumailah	6
al-Kilabiyah	2	ash-Sha'bah	3
al-Mansurah	11	ash-Shaharin	2
al-Markaz	1	as-Salihiyah	1
al-Mutairifi	4	at-'Paraf	16
al-Qarah	5	at-Tuwaithir	5
al-Qarn	1	Julaijilah	1
al-Qurain	1		
TOTAL			299

* Includes the villages of al-Muhtaraqah and al-Marah

projects, have for the first time created an abundance of employment opportunities in this area. Consequently, those who were unable for some reason to migrate to the oil centres and share in the new wealth have found that the oil wealth has been channeled to them in their own area. The Drainage and Irrigation Project, initiated in 1961, and completed in December 1971,[8] has cost $51 million[9] or £28.7 million. This includes also the compensation which was paid directly to the farmers whose lands were affected by the project. It provided 2,200 jobs for the local people in addition to 155 more jobs for foreigners[10] (see Appendix C).

Although this project did not affect the rural settlement of the Oasis directly in terms of new structures in these villages, it has done a great deal to protect the villages and hamlets of the Al-Umran region from the surplus used water which accumulated round them and used to threaten their existence. This project has not only drained the water-logged land round these settlements and saved their houses from flooding, it has also rendered them easy of access, eliminated the health hazard and revived their agricultural economy through the reclamation of hundreds of hectares which had been virtually covered with saline water. A net of irrigation and drainage canals has spread all over the Oasis, not only to drain the surplus old water, but also to bring fresh water for cultivation to the benefit of these settlements (Fig.14.1). Along these canals a transport system was constructed to provide access to the project for heavy trucks, both during building and for subsequent maintenance, and it has been designed in such a way as to keep the number of bridges to a minimum. This transport network is connected with the Dammam-Riyadh road (520 km. long) which was constructed in 1962 through the western part of the Oasis parallel to the railway that had been established in 1951, (for details on the internal transport network see Chqter 12).

Fig.14.1 IRRIGATION AND SETTLEMENT PATTERN OF AL-HASA OASIS



AFTER WAKUTI, 1969

These transport roads have brought the agricultural settlements of the Oasis out of their long traditional isolation and brought them into closer contact with each other, with the towns of the Oasis, and with the other parts of the country. Consequently these settlements have been subjected to severe changes,not only in their social structure, but also in their traditional physical structure, a matter which will be discussed later in this chapter.

The Sand Stabilisation Project was, according to the Ministry of Agriculture and Water,[11] begun in 1962 and was designed to protect at least ten settlements located between Birkat al-Asfar and al-Kilabiyah village, in the north and north-eastern part of the Oasis. The sand encroachment upon the Oasis, coming mainly from the north on a front 15 km. long, has covered many settlements in the past and has gradually reduced the size of the Oasis. The project had by 1970 cost more than 25 million Saudi Riyals (£3 million approximately), and it has in fact succeeded in minimising this particular danger, thus saving the settlements and agricultural areas in that part of the Oasis from otherwise inevitable destruction (see Chapter 10). Approximately 480 jobs were created by this project, as well as 72 km. of new roads, so that here too, as in the case of al-Umran, the settlements are now connected with each other, with the other villages and towns of the Oasis and with other parts of the country for the first time in their history. Consequently, these settlements too have been subjected to severe changes through the construction of roads and the other activities connected with this project. While few buildings have been added to these settlements by the project, its economic contribution is obvious and will certainly continue to affect their growth and structure in the future. The more than four million trees planted by the project have made the area a recreational attraction to many people from every part of Al-Hasa Oasis.

Other projects, sponsored mainly by the Ministry of Agriculture and Water and other agencies, have all helped to ease the rapid change of this era. The agricultural research centres, agricultural assistance to help farmers in the application of the newly introduced agricultural methods, the social development centres established recently in the Oasis, and many other projects, are all examples of such attempts to overcome the problems created by the recent and current development of the Oasis.

In the fifth case, the general improvement in the standard of living caused by the introduction of oil in the country has led to the breaking down by the young male generation of the traditional habit of residing with the whole family in a single large house under the authority of the father. The young males found themselves the main earners in the family, and therefore became eager to have a say in family affairs, a demand which the older generation rejected. The older generation tried to ensure their traditional authority by interfering in the private lives of their sons, and this interference was in turn rejected by the young men. The struggle between the traditional values represented by the old and the newly acquired values represented by the young has so weakened the traditional family relationship that the young married males have broken with tradition and established themselves in new independent and smaller houses. In this way the old, large family has split into several smaller families, and the old, large house has given way to new, smaller houses. Thus many smaller houses were erected, and this, in conjunction with the three factors previously discussed, has led to the growth and expansion of some of the villages of the Oasis.

Thus, although the expansion of the villages is small and slow in comparison with that of the Oasis towns, it has nevertheless been enough to create problems in land ownership and village structure. Consequently,

the authorities and services of the Baladiyah (municipality), traditionally confined to the towns alone in the Oasis, have now been extended to include the villages as well. Several branches of the Baladiyah of Hofuf town have been established in various villages in the Oasis, such as those of al-Jafr, al-Uyun, al-Qarah, al-Mansurah and al-Umran.[12] Thus the growth of these villages has been brought under control for the first time in their history. The installation of electricity and domestic water networks in these villages has also promoted the involvement of the Baladiyah in their planning. The Baladiyah Authority has acted in such a way as to prevent the continuity of the traditional street pattern (crooked narrow streets) at least in the newly developed areas in these villages, since these traditional streets work against the new pattern of life, which has brought with it the introduction of cars in the daily life of the people. Building new houses has also become subject to the permission of the Baladiyah.[13]

A new pattern of streets characterised by width and straightness has thus emerged in the newly developed areas in the villages of the Oasis (Plate 14.3). Consequently the wealthy families of each village have started to move out of the village centres to the newly developed suburbs, because the pre-oil structure of the village centres proved to be a disadvantage in the oil era for several reasons:-

(1) Cars, which have only recently been introduced in these villages, cannot penetrate the old, crooked, narrow streets of the traditional core of the settlements.

(2) The various government services, i.e., schools, health centres, police stations, etc., prefer to build their new offices in the suburbs of the villages rather than in the centres, for the old insecurity prevailing in the pre-oil era left little space in the village centres unexploited. The location of the new service centres has in turn attracted

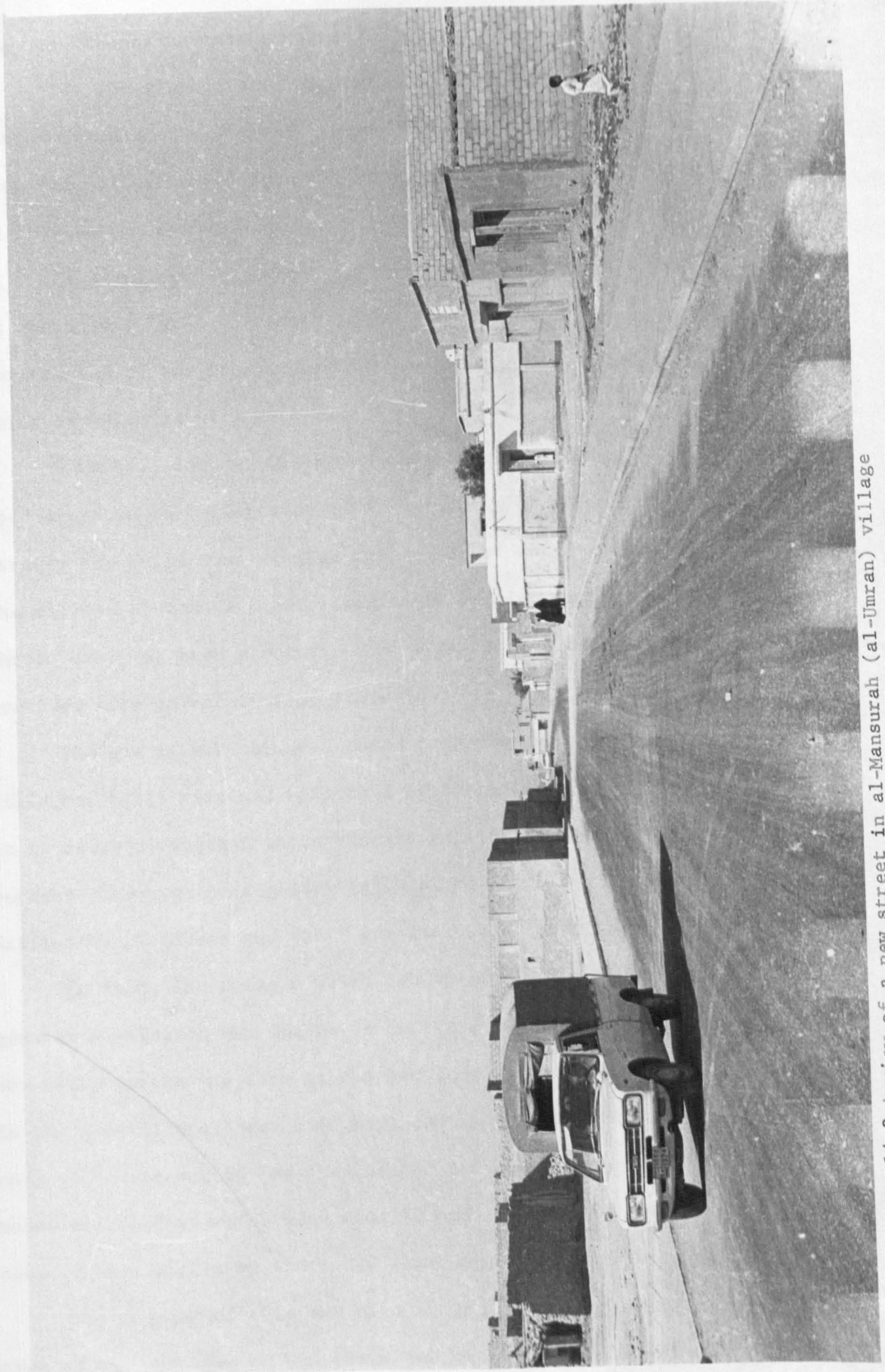


Plate 14.3 A view of a new street in al-Mansurah (al-Umran) village

the inhabitants to reside nearby in the suburbs.

(3) The village centres became unhealthy, especially after the introduction of the domestic water network, because the used water from the houses drains into the narrow streets of these villages as there is no sewerage system.

(4) Moreover, the wealthy families of each village prefer to live in new houses built of cement rather than in the old ones which were constructed of the traditional fragile, dusty, sun-dried bricks, a point to which we will return.

However, although the new street pattern of the recently developed areas in the villages differs completely from the old one, the new streets are still less elegant than those of Hofuf and Mubarraz towns. The village streets are not illuminated by electricity, and trees and shrubs have not been planted. Some streets have been asphalted and provided with pavements (see Plate 14.1).

The old street pattern, which is preserved in old parts of the villages, still remained untouched by the modern planners in 1972. Yet it is doubtful whether these streets will be left unchanged, not only because they are functionless in this era of oil, but because of their difficulty of access and their now insanitary condition.

In fact, the changes which took place in the villages have also generally affected the choice of construction materials. The traditional sun-dried bricks and date trunks and fronds, which were in common use in the pre-oil era, have been replaced in most of the villages by bricks made of cement and by imported planks and beams for roofing (Plate 14.4). Doors and windows which were usually made of wood have also in some cases been replaced by steel and aluminium, though this is not universal.

The changes of this era have affected not only the physical structure of the villages of the Oasis but also their social structure. The

Plate 14.4 Bricks made of cement, steel doors and imported wood have replaced the traditional sun-dried bricks made of mud, the doors of local wood and the date beams once used for roofing

traditional conflict between the Sunna and Shii'a sects in the mixed villages has gradually eased with the steady improvement of the economic condition of these villages. Unfortunately, in the light of the available material, it is impossible to use statistical date to prove this phenomenon, but from various interviews in 1972 with Sheikh Baqir Abu Khamsin (the head of the Shii'a sect) and other natives of the villages, it can be concluded that the social structure of these villages has also been affected. Sheikh Abu Khamsin commented that the old isolation of the sects in the mixed villages has now been broken under the impact of education, the improvement of transport and the easy life of today. The individuals of each sect reside in the villages not only as good neighbours and friends, but also as partners in business and relatives by marriage.[14]

It seems that the schools which have been built in the villages during the last 25 years have helped to bridge the gaps between the younger members of the two sects. The improvement in transport has not only made contact with the other parts of the country easy, but also the weekly commuting of the oil workers between the oilfields and the villages[15] has brought constant contact between the individuals of each sect at work and in the buses on their way to and from their villages. Working in the oil industry has indeed created a common interest shared by the individuals of the two sects, so that they have managed to overcome their old differences and have learned to co-exist and to co-operate with each other.

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15. Personal observation

CONCLUSION

CONCLUSION

Although the Middle East is generally considered an arid zone, nevertheless, it has produced the oldest known cities in the world. For hundreds of years great urban civilisations have developed in these cities and they have created havens of comfort for Man in some of the world's harshest environments. In fact the Middle Eastern City represents in its traditional form a habitat evolved through man's centuries of experience of a difficult region, a wealth of experience which ought not to be neglected in modern town planning in the area.

Wherever, one goes in the Middle East one finds that the traditional towns are of much the same type despite the geographical distances which separate them. The old Al-Hasa towns were not exceptional cases. They, indeed, represent in their physical characteristics typical examples of Middle Eastern Cities. Their quasi-circular compact shapes,surrounded by high and thick defensive walls, are common to all the typical Islamic towns of the region. The internal concentric enclosing pattern,radiating from the centre towards the town wall, provides us, too, with good examples of a design found in many other cities in the Middle East, where these enclosures were functionally separated from each other.

In the central enclosure were always located the palace or palaces of the ruling elites, the aristocratic class, the principal governmental buildings and the Friday mosque. This enclosure was usually surrounded by the business and then by the residential enclosures, the latter running up to the outer town wall. Cemeteries were always located outside the town wall near the town gates. The twisting narrow streets and the court-yard house were typical designs found not only in the towns of the Al-Hasa area but also everywhere in the old towns of the region.

This similarity of the old Al-Hasa towns with other towns of the region stems, firstly, from the common physical environment of the area,

which left the inhabitants across the ages with no choice but to build their cities, towns and villages in locations which would yield them a living and in such a way as to avoid the worst effects of the harsh environment. The availability of water in specific areas has shown itself to be an essential factor in the rise of many settlements in this arid zone. Indeed, all the Oases in the desert areas of the region, particularly those of Arabia, owed their whole existence to the presence of underground water in the sites where they are now located. Rainfall in the hot desert is very sparse, no more than a few millimetres each year.

This study has revealed that settlements in Al-Hasa Oasis existed for three purposes. (1) agricultural, (2) political and (3) commercial.

(1) The plentiful underground water and the good soil of this area had from time immemorial encouraged date cultivation. Date cultivation was the firm foundation upon which vested the existence and the continuous presence of settlement in the Al-Hasa area. Dates were the basic food of the settled community of Al-Hasa Oasis, and the commercial crop encouraged trade with other communities outside the Al-Hasa Oasis. Indeed, individual wealth in the area used to be counted in terms of palm trees owned.

However, these conditions have nowadays completely changed and the Al-Hasa settlements are no longer dependent on date cultivation, as they used to be, but on various new activities, such as working in jobs created by the oil money, either directly by the government or through private enterprise. Indeed, migration to the oil areas has permitted the transference of large sums of money into the economy of the present settlements of the Oasis, a factor which has permitted their continued existence in the same old locations. Although the shift from date cultivation

to vegetable and other crops has recently occurred due to change in the dietary habits of the inhabitants, the cultivation of these new crops has not itself become the basic support of the community, as once date cultivation was. In fact no one is, now, purely dependent on agriculture for his livelihood; all the inhabitants of these settlements have found alternative means of supplementing their incomes, from non-agricultural sectors.

In future, any plan to establish new settlements or to develop older ones in the Oasis should take account of the fact that the old base of date cultivation is no longer viable to support such settlements, unless dates are to be turned into a more profitable crop upon which the inhabitants of these settlements can again rely. Indeed, date packing factories and the Faculty of Agriculture which has been established recently in the Al-Hasa area ought between them to research into the best way of using the date crop in the daily life of the inhabitants of the Oasis and of other parts of Arabia which used to be regular customers for dates produced in this Oasis. Scientific research might lead to the discovery of a new method of bringing dates into use which will help in turn to support the settlements which depended previously on the traditional date cultivation.

Today, television provides a good means of publicizing the products of the packing factories. In addition employment for the inhabitants of these settlements should be provided either by the government services, the oil industry or private enterprise, if the continuity of the settlements is to be preserved.

However, such developments may take place in the villages located in the southern part of the Oasis away from the danger of the sand-dunes and the Sabkhahs which led in the past to the disappearance of many settlements as has been revealed in this study. The danger of these

physical elements is still present in the area despite recent technological efforts to guard against it. Efforts to protect villages which are still endangered by these physical factors may continue, but the growth of such villages is better not encouraged, for they might well face the same fate as previous villages if the present Sand Stabilization Project fails to achieve its purposes in protecting them and their agricultural land against the encroachment of the sand. The harmful elements which led to the disappearance of many settlements in the past, such as the vanished towns and villages of Al-Hasa Oasis, can provide a lesson to be learnt in any future development of settlements not only in the study area of the Oasis but also in other parts of Saudi Arabia and the Middle East as a whole.

(2) Settlements which originally existed in the Oasis for political purposes are clearly represented by the vanished town of Al-Hasa, which was established in 929 AD to serve as capital for the Carmathian dynasty of the area. This town gradually disappeared as the Carmathians were conquered by the other local dynasty of Al-Uyuni.

History has indeed played a decisive role in the rise, development and fall of some towns in the area. In fact, throughout history the whole of the Middle Eastern region had witnessed similar events which led also to the rise and fall of many cities and towns. Their prosperity and decline connected in one way or another with the rise and fall of Empires or local dynasties in the region. The Middle East is full of the skeletons of old cities which rose and fell because of the fluctuating fortunes of their builders across the years.

Political factors are no longer such a variable influence. The Oasis is politically more stable than ever before. If the political authorities of the Oasis want the settlements of the area to grow and to preserve their continuity, they should introduce into them various de-

velopment programmes and services. Such innovations have already been introduced in many of the Oasis towns and villages.

(3) Some other settlements in the Oasis such as the present Hofuf and Mubarraz towns have emerged in the area to serve as commercial centres for the Oasis along the old caravan route which crossed the area in its southern part. These two towns have developed not only as commercial centres but also as political capitals for various local dynasties, or administrative centres for other states which have annexed the Oasis at one time or another.

Physical conditions and political events have also influenced the internal structure and the morphology of the settlements of Al-Hasa Oasis and of the Middle East in general, as has been noted earlier in this conclusion. Man in this arid region has learned through long and bitter experience to adopt a town structure and morphology suited to the inhospitable environment of the region. The insecurity which prevailed in the area before the 20th century was also carefully considered in the town planning of old. Man's cultural and social needs were balanced with his economic desire to achieve some sort of basic comfort. Fortunately, a city suited to the physical and the human environment of this Oasis was developed, with an extraordinarily specific adaptation to the environment of the Middle East. The Al-Hasa towns provide, in their traditional structure and morphology, a true picture of such adaptation. They reflect, indeed, the traditional way of building towns in the whole region.

The traditional Middle Eastern town was the right town in the right environment. It could have been expected to go on surviving as it had been for hundreds of years, but oil was discovered in the region, bringing with it great economic and social changes, not only to the inhabitants of the oil producing countries but also to whole towns and villages in

these countries.

Al-Hasa Oasis, which is not located in an oil field, has been directly affected by the oil activities faraway from the Oasis area. Farmers, craftsmen and traders have left the Oasis to work in the oil industry and have returned to their places of origin with new experience gained in their working places in the oil fields. This has led to immense changes in the traditional life style and the physical character of their towns and villages. The other direct impact of oil on the Al-Hasa settlements has been in the form of the introduction of a home ownership programme by the oil company, which has enabled most of the participants from the Oasis to build new style houses in the towns and villages of the area.

The traditional towns of the oil areas tend, nowadays, to imitate western urban design, which has resulted in an architectural and cultural confusion which clearly falls short of the human needs of this Oasis and of the region as a whole.

The dilemma which now faces the town planners of the Middle East is how to alter the old town structure, in order to make it fit the changed pattern of life which has only recently developed as a result of the oil development. This dilemma can be clearly recognised in the superimposition of new plans upon the structure of old towns as if this structure did not exist at all. (See figures 13.3 and 13.4.)

These recent changes have certainly produced problems for which the local planners were unprepared. Should the old structure of these towns be preserved for tourists? Then what should old Saudi Arabian towns do, since no tourists are allowed, at present, in the country? Should they be raised to the ground to make way for new plans which meet the needs of modern times? This would destroy a large part of the Saudi cultural heritage. However, the answers to such questions will be dealt

with later.

The general impact of oil on the Middle Eastern City and the response to this impact can be seen in the specific case of Al-Hasa Oasis, which has been affected by the oil discovery in nearby areas.

The discovery of oil in the late 1930's exposed the communities of the Oasis, unprotected and unprepared, to the rapidly developing outside world. Most of their traditional values and activities became increasingly irrelevant and thus adjustment had to be made or alternatives found. Unfortunately, the people of the Oasis had only limited knowledge with which to judge the dimension of the changes that had been introduced into their area by oil, so that the right adjustment was not always made. An assessment of the advantages and disadvantages of the options available should have been made before any adjustments took place. Unlike the newly-established oil centres, Al-Hasa Oasis and, indeed, the other old communities in the Eastern Province, had long traditions and sets of patterns gained over the centuries through bitter and frequent experiences. These traditions and patterns must not be simply abandoned if the balance between man and his environment is not to be disturbed. But it is equally important that the old pattern with all its ramifications should not remain unaltered. It is vital that some adjustments should be made in order to gear the old system harmoniously into the newly-introduced one. In this way the Oasis would not be completely isolated from its past, and neither would its heritage be an obstacle to new and future trends. Fortunately, oil wealth is enormous and thus it could be used to ease the transition from the old to the new system, and to promote progress not only in the Oasis but also in other parts of the country which have not been directly affected by the coming of oil.

This study reveals new points which have a direct bearing on settlement growth and the policies of future development in Al-Hasa Oasis.

Before stating them, however, it must be emphasised that any one factor or problem must be considered in the light of its relationship to the situation as a whole. For instance, any plan to develop the physical parts of a settlement must take into consideration the human implications.

The tackling of these two aspects of settlement development in unison is most important if the balance within each settlement is not to be disturbed. The new values brought about by oil must harmonise with the old values. A transition from the old to the new should not only create new and convenient patterns in these settlements, but also a pattern which will suit the life of today, and tomorrow, when the oil runs out and a return to the old pattern might become a necessity. The following are the main points to emerge from this study.

1. The discovery of oil caused outward migration and economic decline in al-Hasa. To remedy this, the traditional economy of the Oasis, mainly agriculture, must be sufficiently promoted and developed to make it unnecessary for the farmers in the villages to emigrate to the oil centres in search of financial advantage. Money from oil can be used to achieve this. The various agricultural projects carried out recently in the Oasis are, indeed, important steps in the right direction, but they alone cannot promote agriculture in the Oasis. They must be followed by other measures if these expensive projects are not to prove a waste of time and money. The measures that may be taken are the following:-

(a) The projects carried out recently in the Oasis, mainly the Irrigation and Drainage Project, should borrow from traditional agricultural practice, especially as regards the system of water distribution which has evolved in the Oasis through the past centuries. This, however, would involve a detailed study of the traditional agricultural system which has existed in the Oasis until a few years ago. Then the relevant points re-

vealed in that system, suitable for present circumstances, may be retained in the process of creating the new system.

For example, the traditional agricultural system known locally as the Saih system (flowing water distribution system) is still a valid system even in the present conditions. Such validity stems, perhaps, from the similarity between the old situation for which the Saih system was originally developed and the new conditions in which it could well be applied. The Saih system was originally developed in the past to distribute the flowing water of the individual springs over areas irrigated by each one of these springs, so that each farm got a fair share of the spring water according to its size. The new Irrigation and Drainage Project extends over a much larger area. Here the water of the nearby springs is gathered in larger main channels which stretch over the whole Oasis area. The different parts of the agricultural area of the Oasis are reached by sub-channels of small branches which are intended to serve the groups of farms located away from the larger main channels (see Fig.14.1). It is in this way that the old and the new irrigated areas are similar. If the Saih system served very well under the old conditions described above, then it may also be applicable to the new circumstances with appropriate minor modifications.

However, if the old Saih system of the Oasis is basically valid to the present circumstances then there may well be other old irrigation systems in the Oasis worth studying. One of these is known as the Mughraf system which used to regulate the distribution of water among the farmers who are dependent on the raised water in the area. However, its applicability to the projected new system would probably be small as conditions created recently by the new project are quite different from those which existed in the area just before the 1970s. However, this system can be studied too and relevant points used in the creation of the new system.

The stress on using the old agricultural system as a main source for the newly suggested one is because it was adopted by the farmers of the area themselves across long centuries, grasped by them, and became a part of their agricultural and cultural life. Introducing foreign systems, unless simple, should be avoided, for this would confuse the farmers and serve no good purpose.

(b) The price of agricultural products today is too low compared with the price of other commodities. The farmer must be guaranteed a fair return for his products if he is to maintain his standard of living and if he is to continue cultivating the land. The price of his product should be allowed to go up in such a way as to keep pace with the rising price of other commodities in the markets. Similar foreign products could be taxed to enable the local produce to compete in the market against them.

(c) Farmers should be organised in local co-operative societies under the supervision of an official body. Farmers could then sell their products to these societies, which should pay them an attractive price for their produce. If a subsidy is felt necessary to help the consumer, then the subsidy should be paid to such societies in order to bring down prices.

It is vital that the traditional Semsar, who is now acting as the middleman between the producer and the consumer, should be eliminated. He is an evil of the present system, and the main enemy of the farmer. He pays too low a price for the farmer's produce and charges the customer too high a price for the same produce. His place may be taken by the agricultural co-operative societies which should act then not only as collective centres for the farmer's products and shopping centres in the central villages,but also as the medium between farmer and customer, in the villages and towns of the Oasis and the other areas which are dependent on the Oasis produce. Semsars may be then employed in such societies but under strict regulations which prevent them from turning such societies

into centres for exploiting the farmers of the area.

It is very important that these societies should be established on locations near the majority of the farms and the farmer's villages for easy access and low cost of transportation. The periodic markets study shows that certain locations in the area are more favourable to the farmers than others. These locations are the village markets: al-Qarah, al-Jafr, al-Jishshah, at-Taraf, especially the first one. Indeed, branches for such societies may also be opened in ash-Sha'bah, al-Marah and al-Mansurah for they are either located away from these market villages or have central locations in respect to many farmer (see Fig.12.4).

(d) The changed dietary habits, caused by the new affluence resulting from the introduction of oil, have resulted in large imports of foreign produce. Many of the crops could be grown locally and incorporated into an agricultural system that could benefit local farmers. Additional stimulation should be given to encouraging the reclamation of more land for agriculture.

(e) Agricultural assistance, which is indeed already being provided by the Ministry of Agriculture and Water in Saudi Arabia, should help farmers with all aspects of farming which are beyond their abilities or even awareness.

If all these steps were carried out honestly, they would certainly result in enourmous benefits to the farmer and contribute much to the improvement of agriculture in the area. The farmer would then no longer be tempted to migrate to the oil centres for economic reasons, and agriculture would cease to be the depressed economic sector of the community. In this way, the farmers would be held to their land, and their villages would continue to exist.

2. With regard to urban development in the Oasis, it should be stressed here that the new growth experienced in the Oasis towns during

this era should be controlled in such a way as to create towns in which man can live and work happily.

This cannot be achieved without adapting the traditional towns which suit the environment. The newly-introduced town plan, which is alien to the desert environment, may well do more harm than good to our future towns. If it eventually creates the wrong towns for the environment, it will have proved a waste of time, money and effort. Our towns must suit our own human and physical environment if they are to last. The old structure, and the human and urban values represented in it, should be used as a guide in the creation of new plans, which should fit into the old system and provide for the known needs of today and the expected needs of tomorrow, when the oil dries up.

The old structure existing today should not be destroyed by the present waves of development. It is a valuable urban heritage and provides many principles for urban planning. It is equally important, though, that the old structure of old towns should not become an obstacle to the present needs of daily life. What is actually needed in these old towns is minor adjustment and improvement, but not large changes. Changes should be made only outside the old structure. It is important, too, that the old and the new should not be allowed to grow in isolation from each other; it is equally important that neither should disturb or destroy the real values inherent in the other.

3. Very much related to the above are the rural areas of the Oasis, which cannot be ignored in terms of housing, etc. The two are interdependent from the economic and the social point of view: neither can survive without the other. The real dangers threatening the rural areas are:-

(a) the decline of their traditional economy as a result of the recent changes introduced by oil;

(b) the economic and social attractions of the towns, be they the towns of the Oasis or other towns in the Eastern Province.

To keep the rural population in their villages is a priority if the inevitable urban problem caused by migration is to be avoided. This cannot be achieved without strengthening the economy of these rural areas (see above) and developing the villages, so that the attraction of the towns is kept to the minimum. The creation of a sound balance between the rural and urban areas is urgently needed, not only in the Oasis, but nationally. Development should not be concentrated in the towns alone, but should also include the villages and their surroundings. Transport facilities, electricity, domestic water networks, sewerage, telephones and other amenities should be extended to reach the villages, a trend that has, in fact, already started. A master plan for the whole area of the Oasis is needed and employment must be created in any villages that are to develop into urban centres in the future. The creation of several small urban centres in the Oasis is preferable to the creation of big cities. Whatever planning policy is adopted it must not be at the expense of the rural area, nor must it endanger the environmental balance of the area as a whole.

Finally, it should be emphasised that it is not intended to elaborate detailed solutions to the many problems presented recently in the Oasis. Direct or indirect solution of some of the Oasis problems have been attempted in the text itself. Nor does this conclusion elaborate on the methods of applying these solutions. This task is left to the planners and the administrators to deal with on the spot.

This conclusion has tried to point out the main problems which have arisen recently in response to changes brought about by the oil industry in the Eastern part of Saudi Arabia. Some solutions have been suggested with the object of dealing with these problems which have underlined the

basic strategy of settlement development in Al-Hasa Oasis. Solutions such as these may also be applicable to other comparable areas of Saudi Arabia and the Middle East.

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APPENDICES

APPENDIX A

SOME BRIEF ARCHAEOLOGICAL OBSERVATIONS

FORMER TOWNS

Bahlah is located to the east of the present Hospital of King Faisal. Its origin is unknown, but it is commonly believed that this location is the same as the old Al-Hasa town which was built by Abu Sa'id al-Janabi (the Carmathian leader) in 317 AH (929 AD) to serve as a capital for his state. However, this cannot be relied on, for other sites are also mentioned as the location of old Al-Hasa town.

Juwatha is an ancient town located 3 km. inside the sand dunes to the north of al-Kilabiyah village. Its major remains consist of an old mosque which has been described in the Islamic traditions as the second mosque in Islam in which Friday Prayer was performed. The other remains are a cemetery and a spring which contained water up to three decades ago, when it was mentioned by Sheikh al-Abdal-Qadir. It has been suggested that this town was first established by the Hijazi tribe of Bani Abdul-Qais long before the advent of Islam, when they came to this area from western Arabia, probably then afflicted by the drought of 297 AD. This town presumably disappeared some time in the fourth century AH (tenth century AD).

FORMER VILLAGES

Abu Shafi' is a large village located to the west of al-Munaizilah village. It used to be a flourishing village in the days of Ajwad Ibn Zamil al-Ugaili, but later it declined and eventually disappeared, probably in the eighth century AH (fourteenth century AD).

Abul Unuz is a small village located in the Al-Umran area. Sand dune encroachment upon this settlement forced its former inhabitants to abandon it and migrate to the newly established village of al-Mansurah

in the centre of Al-Hasa Oasis.

ad-Dirisiyah is a small village, also located in the Al-Umran area. This village has been abandoned, not only because of sand dune encroachment, but also because of its lower location, which made its site ideal for cultivation.

The historical remains of an ancient village exist to the north of al-Marah village.

al-Mutaiwi is located at a distance of 8 km. to the south-west of ad-Dilaiqiyyah. The former structure of this village has vanished except for the ruin of an old mosque.

Asllaj is an old village located between at-Turaibil and al-Jubail villages. Its former inhabitants moved to the latter village. This village is deserted now and nothing is left of it except for some remains of its former mosque.

as-Sadrah is an old and large village located to the east of Hofuf town. It belonged to the Bani Amer ibn Abdul-Qais tribe and it is probably identical with as-Suwaidirah.

as-Sehlah is an ancient village located to the west of the present at-Taraf village. It was formerly inhabited by people from the Bani Muharib tribe, but it is now totally deserted.

as-Selit was formerly a village inhabited by the Bani Muharib. It is located near the old irrigation canal of al-Harrah in a place called as-Suwaidirah. Some of its remains, consisting of cemeteries and streets, are still visible.

Bani Awadh is an old small village located to the north of al-Qarah village. It existed up to the 1950's, but the continuous sand dune encroachment upon this settlement forced its former inhabitants (200 in

number) to move to the nearby villages. The location is now completely buried underneath the sand.

Bani Nahu is an old village which existed up to the beginning of this century. By the time of Lorimer the village was reported to have greatly declined, and to consist of only about 20 houses. Nowadays there is nothing left of this village except for the ruins of an old castle which still stands on a hilly area inside the date gardens north-west of the present village of Bani Man.

Dukhnah is a small deserted settlement located near Jabal Al-Arba', south-east of the town of Hofuf.

Duwainit is an old defunct village located on the asphalt street which leads to al-Hulailah and other neighbouring villages.

Kuwarij is the name of the remains of an old village located on a rocky area between the present villages of ad-Dalwah and al-Qarah to the west of Jabal Qarah. A mosque built of stone and red brick still survives (its dimensions are 8 m. x 3 m. and it is 1.5 m. in height).

Nadrah is an old village located between al-Qarah and al-Hulailah villages, north of the present asphalt road. It is now completely covered with sand.

Old deserted houses are cut out of the rocks of Jabal Qarah on its western side.

Um Ghanim is a former village located between the site of Bani Nahu village and al-Khudud. It is now completely abandoned and nothing is left of its former structure.

Um Mazin ash-Shamaliyah is a village site located between Mubarraz town and al-Qurain village in a place called Taraf at Um Mazin. Nothing is left of this village except for some remains of its ruined mosque.

Wasit is a small village located in the Al-Umran area. It vanished because of sand dune encroachment. Its former inhabitants moved and settled in the neighbouring villages.

QASR (Palace, Castle or Fort)

Qasr Ajwad ibn Zamil Al-'Uqaili located north of the road to the eastern villages, and west of al-Munaizilah village near to 'Ain ibn Zaid. It is the ruin of a large building (30 m. x 40 m.), with several towers at its corners. It is reported to have been built during the tenth century AH (sixteenth century AD).

Qasr al-Abeed is a large castle located on the northern side of Shar' al-Mazar (al-Mazar Street). It is reported to have been built during the Turkish Occupation of the area for military purposes. Consisting of four towers and internal buildings, it is typically built of sun-dried bricks and measures 50 m. x 50 m.

Qasr al-Mejassah is an old castle located to the south of at-Taraf village. It consists of ruins built of red mud. The distance between its walls is 20 m. x 40 m. The remains of an old tower still exist at its south-eastern corner, as well as the ruins of an old spring on its northern side.

Qasr al-Waziyah is a castle located to the south of al-Waziyah village. It consists of two towers. One is at the north-western corner, while the other is located at the south-eastern end of the castle. Its dimensions are 15 m. x 15 m., with a height of 5 m. The castle is, of course, made of mud and stone, and roofed with palm tree trunks. The remains of an old spring exist to the north of this castle.

Qasr al-Wijaj is the ruin of an old castle built in 1213 AH (1798 AD) by Imam Sa'ud ibn 'Abdul 'Aziz ibn Muhammad Al-Sa'ud on hilly ground south

of the old irrigation canal of Ghasybah or Qasr ash-Sharqy.

An-Naslah is also an old castle or fort, located to the south of at-Taraf village. It has a tower with dimensions of 5 m. x 5 m.

Qasr an-Nesf was built in 1288 AH (1871 AD) on a hilly area between Hofuf and al-Munaizilah village, immediately south of the road leading from Hofuf to the eastern villages of the Oasis. It has an area of 20 m. x 20 m.

Qasr Ibrahim is considered to be the largest castle in Al-Hasa Oasis. It is now located to the south of al-Mazar Street and north of the demolished palace of the Emirate of Al-Hasa. It is believed to have been built by Ibrahim Pach, though this is disputed. The castle is constructed of sun-dried mud bricks. The superstructure as a whole supports the belief that it was distinguished both for its size and the thickness of its walls. Indeed, its thickness is logically dictated by the fact that its lower foundations have to be solid enough for the overall heavy structure. Six towers in addition to one minaret and a large dome were built as part of the castle. Its size is approximately 120 m. x 120 m.

Qasr Khizam is a palace or a castle located in the al-Mazru'iyah Quarter of Hofuf. It was built in 1210 AH (1795 AD) during Sa'ud Al-Kabyr's regime. It is constructed of sun-dried mud bricks. It consists of six towers.. Though its size is similar to that of the other castle, it differs geometrically (160 m. x 80 m.).

Qasr Muhairs is now located in the northern part of Mubarraz town and is still in good condition, as it is used nowadays by the Saudi government. It has a tower at its south-eastern corner. The height of the castle exceeds 8 m.

Qasr Qal'at at-Tuwaithir is located at the present western entrance to the Sand Stabilisation Project. It has been suggested that it was built by the late King Abdul Aziz (Ibn Sa'ud) in 1333 AH (1914 AD).

Qasr Sahud is an old castle built in Mubarraz town in 1210 AH (1795 AD) during the days of Sa'ud ibn Abdul Aziz al-Kabeer. It measures 110 m. x 70 m., and its walls are more than 2.5 m. thick at the base. The castle encloses a mosque and some dilapidated buildings, and it has six high towers. It is still in good condition at the present time.

Qasr Um-Qunais is located to the west of al-Kilabiyah village. Its building is attributed to King Abdul Aziz ibn Adbulrahman. Built of sun-dried bricks, it consists of two towers. One is located on the south-western side of the castle, whereas the other is on the north-eastern side overlooking a spring to the south. This castle measures 20 m. x 20 m. and is 5 m. high.

VARIOUS HISTORICAL REMAINS

Burj al-Munaizilah. This is a tower located on the south side of the main street towards the western end of al-Munaizilah village. It is circular, with a radius of 6 m. and a height of 5m.

Hammamat 'Ain Najm. These are baths built on the mineral spring of Najim, west of Mubarraz town. They consist of three convex domes. The main dome is constructed above the opening of the spring. No date is given for their construction, though they seem to be of Turkish origin. The hot mineral water of this spring is frequently visited to cure certain diseases.

Madaris al-Wa'dh. These are preaching schools found in various parts of Hofuf town. The most important of them is ash-Shaf'y School, which is located west of the Emirate Palace. It was built in 1019 AH (1610 AD)

and consists of a beautiful dome. This school is still functioning as a religious place for practising the recitation of the Koran and the traditional sayings of the prophet Muhammed, peace be upon him.

Masjid ad-Dibs is an old mosque located west of the Municipality Garden, inside the al-Kut Quarter of Hofuf town. It was built in 963 AH (1555 AD) - and it contains several domed strctures and a minaret in its south-eastern part. Friday Prayers are still held in this mosque.

Masjid ar-Raqraqah is an old mosque located to the south of Hofuf. It has almost disappeared except for certain traces of its walls, which were built of white stone.

APPENDIX B

DEVELOPMENT OF EDUCATION IN AL-HASA OASIS

Elementary Schools (Boys)

Year AH	Year AD	Number of Schools	Number of Students	Number of Teachers
1356	1937	1	180	3
1366	1946	3	454	18
1376	1956	19	3,913	164
1386	1966	46	13,619	546
1391	1971	63	19,531	765

Intermediate Schools

Year AH	Year AD	Number of Schools	Number of Students	Number of Teachers
1367	1947	1	5	3
1377	1957	1	125	25
1387	1967	7	1,330	109
1391	1971	17	2,927	150

Secondary Schools

Year AH	Year AD	Number of Schools	Number of Students	Number of Teachers
1377	1957	1	7	*
1387	1967	1	167	15
1391	1971	1	473	?

* included in the number of staff for one of the intermediate schools, with which it shares a building

Other Educational Establishments in Al-Hasa Oasis

1391/92 AH (1971/72 AD)

Establishment	Number of Schools	Number of Students	Number of Teachers
Teacher Training Institutes	1	411	27
Technical Schools	1	164	31
Special Education	1	198	20

Girls' Education* in Al-Hasa Oasis

1391/92 AH (1971/72 AD)

Category of Schools	Number of Schools	Number of Students	Number of Classes
Elementary	32	10,631	329
Intermediate	3	667	29
Secondary	1	80	4
Teacher Training	1	344	?
Nursing	1	24	3
Total	38	11,746	365

* Information on Girls' Schools for the previous years is not available, since these schools have only recently been established.

APPENDIX C

SOME FACTS ON MAJOR PROJECTS

Irrigation and Drainage Project*

Studied and planned in 1961 by Wakuti, A Swiss Consulting Engineering firm, at the invitation of the Ministry of Agriculture and Water, Saudi Arabia, the construction was carried out in 1967 by Philipp Holzman AG, a West German Construction company, under a contract made between them and the Saudi Authorities. The Project was completed and officially opened by His Majesty King Faisal in December 1971. The cost of the Project amounted to 267 million Saudi Riyals, and provided jobs for 2,500 local workers as well as 250 foreigners.

Length of Constructed Canals

Main Irrigation Canals	147 km.
Sub-Irrigation Canals	249 km.
Lateral Irrigation Canals (garden canals)	1,085 km.
Total Length of Irrigation Canals (concrete)	1,481 km.
Main Drainage Canals	142 km.
Sub-Drainage Canals	187 km.
Side Drainage Canals (garden canals)	930 km.
Total Length of Drainage Canals	1,259 km.
Number of Pumps needed	3 pumps
Total Capacity of Pumps	3.8 m^3/sec
Energy needed	1,000 kW
Concrete needed for Construction (other than concrete canals)	80,000 m^3
Total irrigated Area of the Oasis	
before the Construction of the Project	8,000 ha.

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*Source: (1) Ministry of Agriculture and Water, Saudi Arabia;
(2) Wakuti Report

Area reclaimed by the Irrigation Project	12,000 ha.
Total Agricultural Area of the Oasis	20,000 ha.

SAND STABILISATION PROJECT*

Initiated in 1962 by the Ministry of Agriculture and Water, Saudi Arabia, in the north and north-eastern part of Al-Hasa Oasis, by 1970 it had cost over 25 million Saudi Riyals and it employed 480 labourers. It covered an area of 3,199 Dunum (15 km. long and 5-7 km. wide). It resulted in the construction of about 72 km. of new roads, together with 82 artesian and surface wells in the project area of the Oasis. In addition to this, over four million trees were planted to stop the encroachment of sand upon the settlements and agricultural area of the Oasis. Furthermore, 31 km. of irrigation canals were built and a 25.5 km. length of palm-leaf fencing was completed in order to hold sand grains and reduce wind speed in the affected area. The reclaimed area for cultivation is 5,000 Dunum approximately.

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* Source: Ministry of Agriculture and Water, Sand Stabilisation Project Reports, Riyadh, Saudi Arabia

APPENDIX D

QUESTIONNAIRE

1. Name ... (It is not necessary to mention your name if you do not wish)

2. Location of work

I am working in: (Please tick the correct answer)

(a) Dammam
(b) Al-Khobar
(c) Abqaiq

3. (A) Place of birth

I was born in:

(1) Damman
(2) Al-Khobar
(3) Abqaiq
(4) Al-Hasa Oasis
(5) Qatif Oasis
(6) Other parts of the Eastern Province
(7) Najd
(8) Hijaz
(9) Asir
(10) Tuhamah
(11) Northern area
(12) Outside Saudi Arabia

(B) Place of Origin

My parents originally came from:

(1) Dammam
(2) Al-Khobar
(3) Abqaiq
(4) Al-Hasa Oasis
(5) Qatif Oasis
(6) Other parts of the Eastern Province
(7) Najd
(8) Hijaz
(9) Asir
(10) Tuhamah
(11) Northern area
(12) Outside Saudi Arabia

AL-HASA OASIS

Please answer the following points ONLY if you have originally come from the Al-Hasa area.

1. Permanent Residence in Al-Hasa Oasis

I come originally from:

(a) The village of ...

(b) The town of ...

2. The reason for migration from the Al-Hasa area

(a) The low income from agriculture

(b) The garden was affected by the encroachment of sand or by the increased salinity of the soil

(c) The poor living conditions in the area (lack of electricity, transport, communications, public services and amusement facilities).

(d) Others.

3. <u>The reason for going to the oil areas</u>

(a) I had been offered a job

(b) I was looking for a job

(c) I moved my business

(d) I intended to start a business

(e) I had a family reason

(f) Others

4. <u>The reason for chosing a particular oil centre</u>

(a) It is the nearest place to my area

(b) It is the largest oil town in the area

(c) Some members of my family/village or town were working in this town

(d) Others

5. <u>Sector of work</u>

I am working now with:

(a) The Oil Company

(b) The Government

(c) Private Enterprise

(d) Self employed

6. <u>Contact with the Original area</u>

(A) I am keeping in touch with my original area by:

(i) Irregular remittance of money only

(ii) Irregular visits only

(iii) Irregular remittance and visits

(iv) Regular remittance of money

(a) each week
(b) each month
(c) each year

(v) Regular visits

(a) each week
(b) each month
(c) each year

(vi) Regular remittance and visits

(a) each week
(b) each month
(c) each year

(vii) Irregular remittance but regular visits

(a) each week
(b) each month
(c) each year

(viii) Irregular visits but regular remittance

(a) each week
(b) each month
(c) each year

(B) I have no contact with my original area because:

(a) All the members of my family have joined me or left our original area

(b) I have no properties left there

7. Plan for the Future

(a) I wish to make my home in future in the Al-Hasa area

(b) I wish to make my home in future at my present place of work

(c) I do not know

APPENDIX E

Proposed Asphalted Roads in Al-Hasa Irrigation and Drainage Project

No.		Details of Roads	K.M.
1	D 1.	From Km 3+400 (Hofuf asphalt road) till 6+300 (near F 1)	2+900
2	D 1.	From Km 7+450 (near F 1) till Km 36+250 (after Al yone)	28+800
3	F 1.	From Km 2+500 (main gate) till Km 7+350 (New Imran)	5+350
4	D 2.	From Shahrin village crossing F 1 along D2 ba,D2 through villages Jobail, Al Qara Al Shimaliyah till connection D 2 & D 2.2	11+100
5	D 2-aw	From D2 till asphalt road (Hofuf-Al Hulaila)	2+140
6	D 2 ap	From D2 along D2 ap,F1.2 ah till asphalt road around Jabal Qarah	4+000
7	F 1.1	From D2 along F1.1 at,F1.1,D2 ao till D2	2+700
8	D 2.2	From asphalt road (Hofuf-Jafr) along D 2.2 till end	7+250
9	D 1.1	From D 1 along D1.1,D1.1 ah till F 6.1aa-14	6+400
10.	D 1.1-aa	From d 1.1 along D1.1 aa till Km 0+000 & Wziyah village	5+180
11.	Battalyah road	From asphalt road near F 1.11 along F.1.11, F2,D 1.5,D1.5 ad, P4 a,P4a 18 till pump station No.4	11+850
12	P 4-a	From P 4a-18 to E.R.4, along P 4g till asphalt road (Hofuf-Hulailah)	3+300
13	D 1.6	From D 1 crossing F 1.11 along D 1.6,D 1.6af till P 4g road	4+550
14	F 1.2aa-10	From asphalt road (New Imran)along F 1.2aa-10 till F 1.2aa sub canal	0+780
15	F 4	From Ain Mansur along F 4, F 4ad, D 1.4 to Al Shabah village	8+100
16	D1.4ac	From sag pipe F4 along D1.4ac till D1.4	1+800
17.	F5	From an Ain Umm-Shabah along F5. till asphalt road (Mutarfi - Julajlah)	2+500
18	P2g	From Ain Umm-Shabah along P2g till F4	1+000
19	D1.4ab	From F5.1 along D1.4ab till D1.4	2+200
20	F5.1	From F5 along F5.1, D1.3ae,D1.3, F5.1ae-11, 12 till Julaijilah. F5.1ae-11 till end D3	4+500 1+550
21	Z4	From D1.4 along Z4 crossing F4aa till D1.3	1+300
22	F4af	From D1.4 along F4af till D1.3aa	1+500

No.		Details of Roads	K.M.
23	D1.3aa	From D1.3 along D1.3aa till end	0+450
24	E.R.2	From E.R.2 to pump station-2	1+100
25	Z6.1	From pump station-2 along Z6.1 till Ain Sumboor	0+900
26	F6	From Ain Sumboor along F6, F6aa-1, crossing D1.1ah along F6.1aa-11 til Al-Shuqaiq village	2+000
27	D1bu	From F1 along D1bu, D1bu-10 till Bani Man	1+100
28	D1ad	From D1 along D1ad, F5 till asphalt road in Al-Ayon village	1+000
29	D2.2.1	From culvert D2.2 near Mazawi along D2.2 left D2.2.1 till asphalt road (New Imran-Al-Dalwah)	3+200
30	D2.2.1aa	D2.2.1 along D2.2.1aa to Munazla road	3+000
31	D1bo	From D1 along D1bo till F1.11, F1.1ilac-7	2+290
32	F1.12ad	From Existing road to D1 along F1.12ad	0+500
33	D1bn	From Existing road to D1 along D1.bn	0+500
34	D3af	From Jafr asphalt road along D3af-2, D3af, till D3	3+900
35	D3	From Jafr asphalt road along D3ak, D3 till D3af	2+650
36	D2.2.2	From D2.2 along D2.2.2, D2.2.2ab, D2.2.2ac, D2.2.2ac-12 till F1.5 Al-Taraf village	2+600
37	D2.2	From crossing F1/D2.2 along D2.2, F1.3ac,F1.3 right side till watchman house Fadul village	5+550
38	D2aq	From D2ap along D2aq till F1.1an-10	0+700
39	D2.3	From D2 along D2.3, D2.3ac, D2.3ab, till F1.2 over flow	2+000
40	A.Harrah	From (camp -Hofuf road) to Ain Harrah	2+500
41	P2h	From asphalt road near camp along P2h,F4 till Al-Shabah village & from P2h along P2k till F4	7+000
42	D1.2	From D1 main canal, along D1.2 till asphalt road crossing near K.M 2+900	3+000
43	D lav	From Bridge D1, along D1, Dlav, till Al-Quarn	1+500
44	D1.1ae	From D1.1 along D1.1ae till Waziah village	1+800
		TOTAL	170+000

Source: Perscnal contact with the Road Authority, Dammam, 1975.